



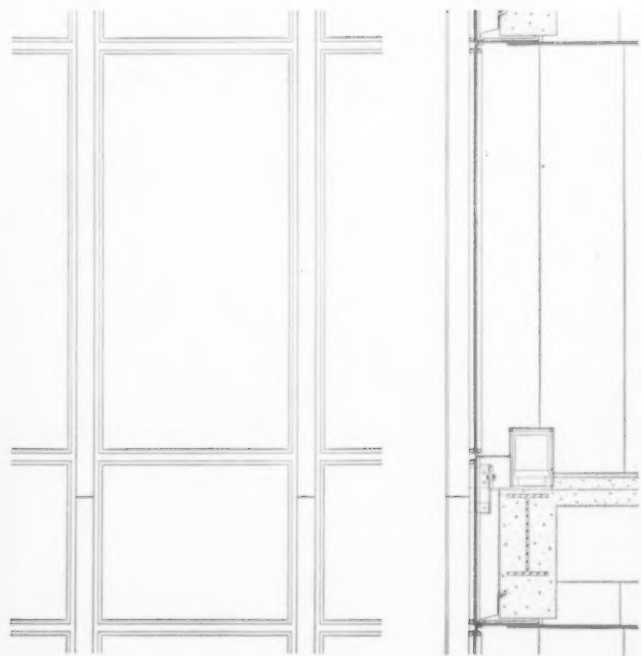
ARCHITECTURAL RECORD

7 July 1958

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The **New Trend** in functional washroom design...



Architect, Theodore Rogvov, A.I.A., Detroit. New Greenfield's Restaurant Headquarters In Detroit, Mich.

Continuous Cotton Towels



This facility in the new Greenfield's Restaurant demonstrates the advantages of specifying continuous towel cabinets in modern washrooms. Installed and serviced by the linen supplier, cabinets end litter... disposal problems... fire hazard.

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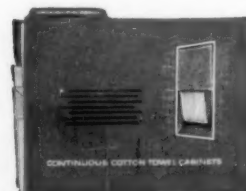
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and National Cotton Council • 22 West Monroe Street, Chicago, Ill.

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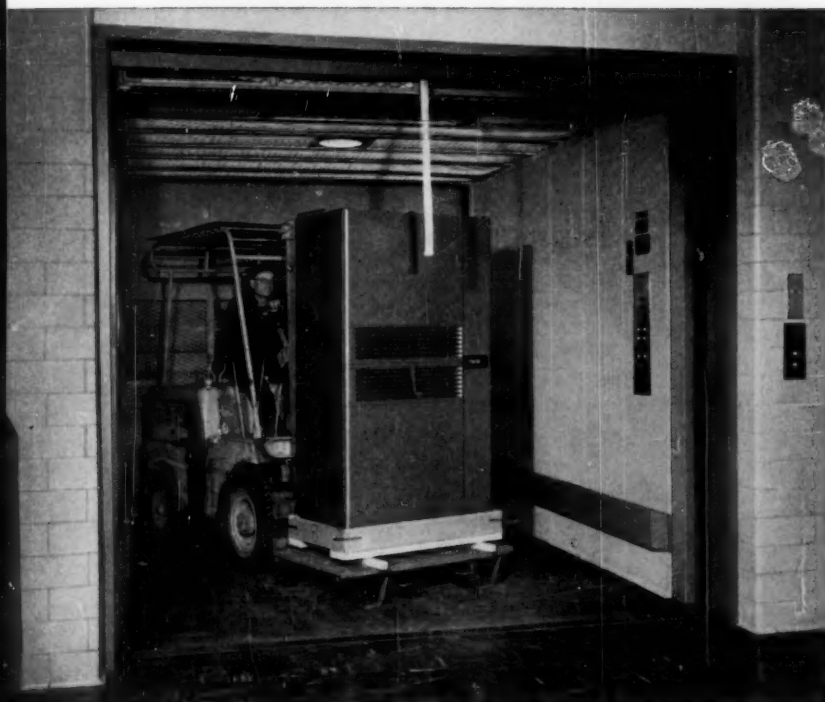
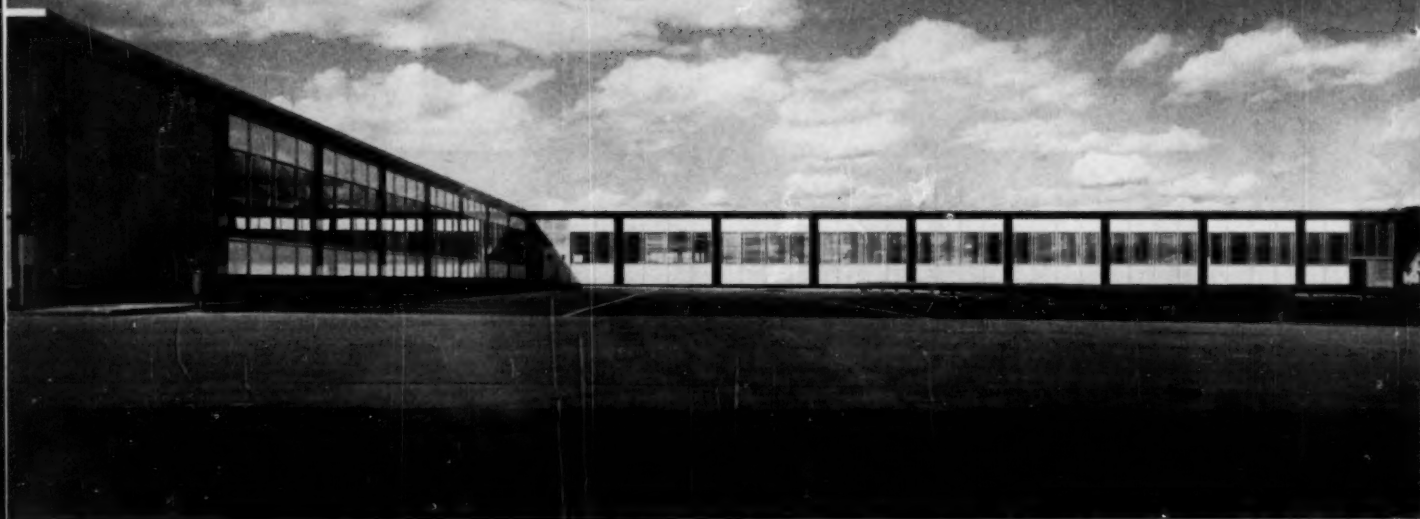
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CONSULTANTS: Albert Kahn Associated
Architects and Engineers, Inc., Detroit

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by Gust. Lagerquist & Sons, Minneapolis

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plunger of sufficient length to accommodate
travel to a future second floor above grade.

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3. FINE REPUTATION OF ROTARY EQUIPMENT

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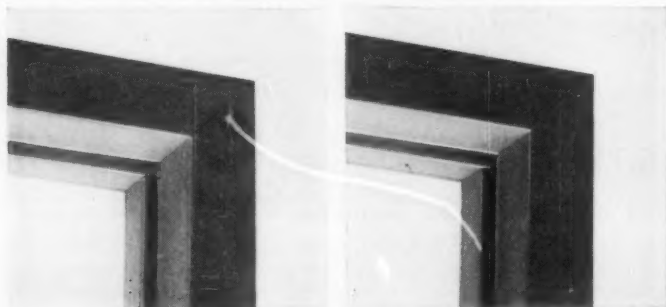
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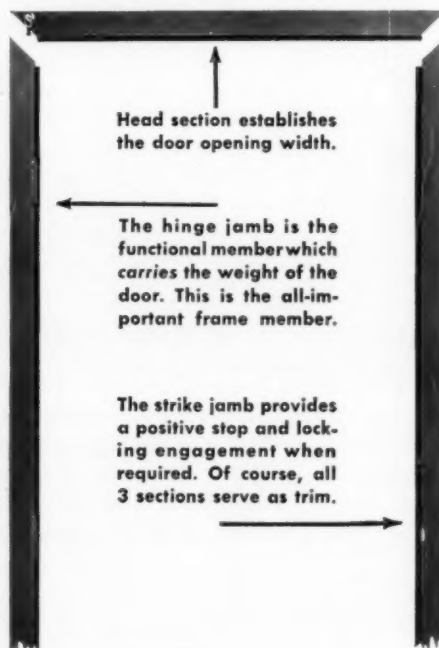
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Conclusion

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July 1958

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Seagram Building, New York City. Mies van der Rohe and Philip Johnson, Architects. © Ezra Stoller photo

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AROUND THE WORLD IN 80 PHOTOGRAPHS

A famous architect and his famous wife—the Wursters—took time off to see architecture in a round-the-world trip. They became especially engrossed in vernacular architecture and photographed a lot of interesting unsung little bits in exotic places—some more important works also.

ARCHITECTS' ARCHITECTURE

The Warren Petroleum Building in Tulsa is the kind of architecture architects like to see and speculate about. Done by the Chicago office of Skidmore, Owings & Merrill, it has some new sunshades, some new refinements, will probably excite more comment in professional circles than in lay ones.

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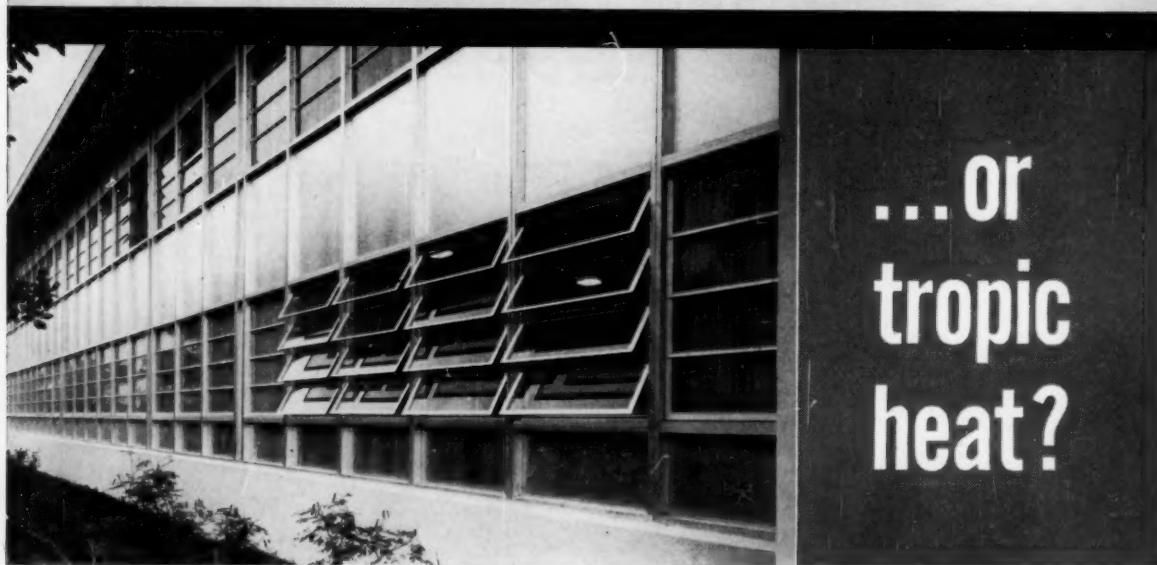
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Architecture and Tradition

The new attention of contemporary architecture to tradition was noted and extolled in the remarks of Henry R. Shepley on the occasion of his receiving the Gold Medal for Architecture of the American Academy of Arts and Letters and the National Institute of Arts and Letters in May. "If I am to say anything about architecture today, as I am told I should, it will not be to joke about the dilemma in which some of our clients find themselves as to whether to be exposed to the world through plate glass or to be hidden away from it behind an Oriental grille. But it will be a serious word about a rather significant tendency in our architecture today. This is the reaching back into the past for inspiration for contemporary designs. Some rather striking examples of this have come to light in the designs of our new embassies and consulates which are now being built for the Department of State in foreign countries. Many of these buildings are a revelation of what today's architects can do in creating something fresh and new and original based on the old traditions and cultures of the country. In fact they show quite clearly that an appreciation of tradition and background, instead of inhibiting the development of modern architecture as was formerly the case, can now be drawn on to give warmth and richness to contemporary work, and in so doing reestablish the thread of evolution which was broken during the late architectural revolution. There is nothing of retrogression in this but on the contrary there is the source of new strength and maturity which will lead us once again to a great evolving architecture that will be a true expression of our times and our native genius." . . . Mr. Shepley himself was recognized, in the Gold Medal presentation citation by Lewis Mumford, as "deeply saturated in the creative architectural traditions of New England. . . . If his great forebear Richardson was, essentially, the traditional architect and master builder, who by sheer power of growth became a radical innovator in form, Henry Richardson Shepley is rather the robust conservator who has kept alive for modern architecture those human qualities that are threatened by our expansion and technological facility. . . . In the whole range of his work, the innovator and the conservator, too long set apart in opposite camps, often bitterly hostile, are

not merely temporarily reconciled; they have become wedded for life."

Architecture as Art

On the same occasion, Paul Rudolph, receiving the Prize in Architecture (Arnold W. Brunner Memorial), spoke of the architect's role as artist. "As an architect, most of my efforts are absorbed in being an administrator, committee man, business man, consultant, coordinator of countless specialists, and, by choice, a teacher. Building committees sometimes concern themselves with only these qualities, but certainly they are without meaning unless the artist pervades every act. Today it is the artist you honor. It is for this reason that it is so deeply felt. For to me, the architect's function as artist means *everything*; it is indeed both the reason and the reward for all of his efforts. Insofar as he is an artist, the architect must inevitably be subject to the universal, timeless rule of *personal* expression. Here he is alone, despite his many roles. Architecture is still an art."

Gropius at 75

A plea for unity in diversity was the theme of remarks by Walter Gropius at the 75th Birthday Celebration arranged for him by the Harvard Graduate School of Design Alumni Association (see page 25). "Our generation," said Professor Gropius, "is presented with the same challenge as were the founders of our Western culture, the Greeks, when they deliberately buried the treasures and temples of their former existence under the triumphant symbol of their new-found freedom: the Acropolis; but we certainly don't face our existence with anything like the same spirit. Probably because too many of us are still clutching the yardstick of the past, looking anxiously for the protective shelter of an authoritative method. They narrow their choice of expression and their field of experience by docile acceptance of a formula which may have served its initiator well enough, but used in an imitative approach, leads eventually to formalistic shallowness and an entirely fictitious unity from without. My own contribution, the Bauhaus-idea, has been used, abused and distorted in this manner, and there is now a popular version of a fixed Bauhaus-style that is tossed around in debate as if it had really existed as a rigidly defined formula. On the contrary. Our strength was that there was no dog-

ma, no prescription—things that invariably go stale after a while—but only a guiding hand and an immensely stimulating setting for those who were willing to work concertedly, but without losing their identities. . . . We have to discover the hard way that neither conformity within the group—which leads to tyranny by the majority—nor willful extravagance of the individual can create a climate which favors the development of initiative and imagination; but that it is the moral responsibility carried by each individual independently within the group which provides the basis for the goal of a democratic culture; unity in diversity."

The Uses of Structure

The ways of the 20th Century seem strange indeed sometimes; never stranger than when unrelated (or apparently unrelated) modern phenomena juxtapose. This garbled observation is made after a rather unsettling view of *Crisalida*, a Salvador Dali creation concocted for Wallace Laboratories, manufacturers of a well-known tranquilizer, to be exhibited at the convention of the American Medical Association in San Francisco last month. That is to say, the experience became unsettling only in retrospect. At the time the New York press was invited to preview *Crisalida* in a half-finished state, nothing could have seemed more normal. In any event, this structure—a mechanical animal 60 ft long, 22 ft wide and 10 ft high—is a breathing chrysalis, symbol of man under the effect of tranquilizers, emerging from a state of fear and anxiety. The plastic skin, supported by a plywood skeleton, inhales and exhales in a 20-minute cycle (at the risk of damaging the mystery for possible spectators, it can be revealed that the breathing is effected by hidden blowers). A surrealistic ramp, to run through the chrysalis, will guide spectators between plastic murals depicting man in three stages,—in the aforementioned state of fear and anxiety, in a state of emergence with the aid of modern medicine, and in a state of liberation and tranquility. Butterflies are the recurrent motif of this last, happy state. Mr. Dali entrusted the execution of his vision to Rene d'Auriac, who managed to produce the *Crisalida* as a demountable structure for its trip to the West Coast and afterward to New York, to be shown at the Coliseum in August.



◀ **OWNER** representative W. F. Timoney says, "This is the most economical system we could use to attain a structural floor with under-floor electrification. Placing of E/R Cofar is fast and economical. After the steel frame and stairs were erected, we put in Cofar and had an immediate work platform on every floor of the building. We'll consider this system in all our multi-story buildings. We *know* its good!"

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◀ **COFAR ERECTOR** W. DeVartanian of Reinforced Steel Erectors Corp., says, "Usually we place steel over wood forms but this job is much simpler. Cofar was delivered so fast, we didn't know where to put all the bundles. It places easily, makes a good work deck and all the sheets are well marked. You get a list of what each bundle contains. Sheets are uniform, too. Altogether, I'd say it was a real smooth operation!"



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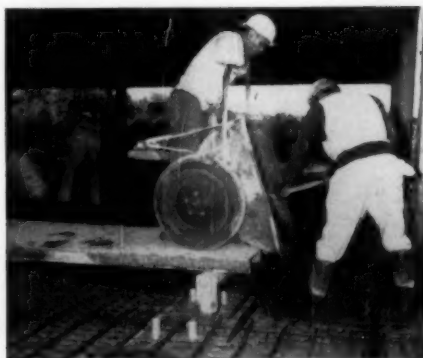
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preset inserts in E/R units eliminate costly concrete
drilling. Install floor fittings after building is completed.



A Subsidiary of
GRANITE CITY STEEL CO.
Granco Distributors in
More Than 100 Principal Cities



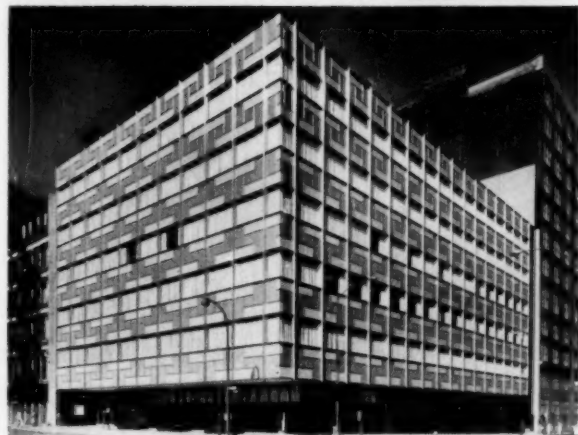
**MAIL THIS COUPON FOR COFAR
AND E/R COFAR MANUAL**

Just sign this coupon . . . clip it to your company
letterhead . . . and mail to Granco address shown
above. Attention Department R-87.

Buildings in the News

NEW SKYSCRAPER FOR CHICAGO—The 21-story and penthouse Borg-Warner Building at 200 Michigan Avenue, just opposite the Chicago Art Institute; A. Epstein and Sons Inc., architects-engineers, and William Lescaze, architectural consultant; George A. Fuller Company, general contractor, and Diesel Construction Company Inc., construction consultant. Façade is blue porcelain enamel and polished aluminum; projected type aluminum sash windows are alternated with the fixed type. The building contains 400,000 sq ft of floor space with average floors of approximately 16,000 sq ft. It is serviced by nine high-speed fully-automatic elevators in two banks; is completely air conditioned. Cost: \$15 million

NEW HOME IN CHICAGO—Mutual Trust Life Insurance Company's new building at Wacker Drive and Monroe Street; Perkins & Will, architects; E. R. Gritschke and Associates, mechanical engineers; A. L. Jackson Company, general contractor. The six-story air conditioned building has been designed for future expansion in two stages—height increase to 12 stories and a 12-story addition to the north. An independently operated two-story parking garage for 116 cars is in operation on the lower level of Wacker Drive. Initial structure, of which top two floors will be leased for present, contains 176,763 sq ft (including garage); six added floors will provide 120,270 sq ft; the projected addition, including two parking levels, another 154,812 sq ft. Exteriors are porcelain enameled steel in two shades of blue, plate glass and stainless steel, with polished black granite. The first floor is set back 12 ft from Wacker Drive to provide an arcade

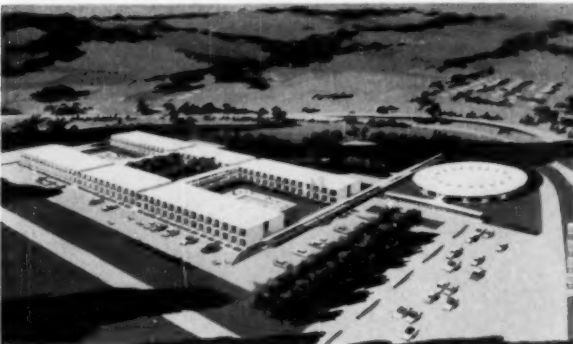


NEW OFFICE BUILDING FOR DOWNTOWN MANHATTAN—A block-square 14-story office building to be erected by Erwin S. Wolfson at 30 West Broadway, directly opposite Mr. Wolfson's 100 Church Street Building (now nearing completion); William Lescaze, architect; Diesel Construction Company, general contractor. 30 West Broadway, to contain 300,000 sq ft of rentable floor area, will have a 12-ft-wide arcade extending along the entire West Broadway frontage; the west boundary on Greenwich Street will have a triangular, tree-planted outdoor sitting area with benches. Individual floor areas will range from 26,600 sq ft in the base section to 21,400 on the upper levels. Façade is to be white brick spandrels with blue-tinted projected steel windows. The building will have a zoned air conditioning system with individual office controls. Estimated cost: \$5 million

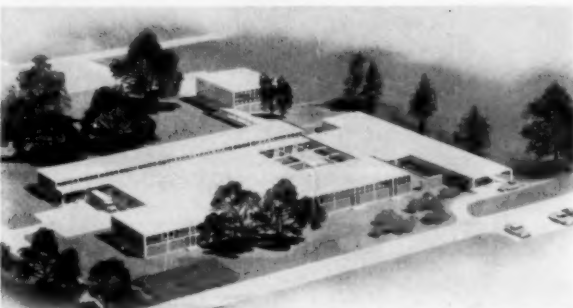
NEW LAW SCHOOL FOR COLUMBIA—The first unit of the East Campus development, a superbloc scheme announced two years ago (AR, May, 1956, p. 11); Harrison and Abramovitz, architects. Preparation of working drawings for the law school is under way; the structure is expected to cost about \$7 million. The superbloc plan will eventually include, in addition to the law school, a residence hall for graduate students of law, engineering and business and a center for students of Columbia's professional and graduate schools as well as a parking garage. The superbloc will be bounded by 116th and 118th streets and by Amsterdam Avenue and Morningside Drive; under an agreement with the city, 117th street will eventually be closed



"WONDERPALACE" IN CALIFORNIA—On a 37-acre site adjacent to Disneyland in Anaheim, a "business-pleasure-convention center"; James Fallon, developer; Daniel, Mann, Johnson & Mendenhall, architects and engineers. There will be a 400-room "skyscraper" hotel, a spherical auditorium hall-sports arena to accommodate some 6000 persons, an exhibit building covering 50,000 sq ft and an outdoor exhibit area of 180,000 sq ft. "WonderPalace has been designed for Interurbia," say the architects. "... It is entirely logical to expect the intermediate-size city in the interurban complex to provide facilities for the commercial, cultural and leisure-time needs of its corporate and residential citizens." Estimated cost: \$15 million

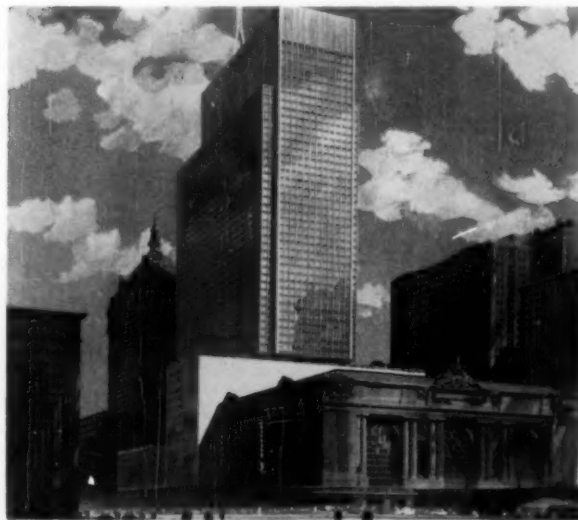


FOR SAN FRANCISCO, THE FIRST HILTON INN—On a 10-acre site at San Francisco International Airport, the first of a network of Hilton Inns projected by Hilton Hotels Corporation for major airports in the United States; William B. Tabler, architect; Cahill Construction Company, general contractor. Guest-room buildings connected by covered passageways will provide a total of 300 guest rooms; a circular "Central Building" adjacent will house two restaurants, private dining rooms, a cocktail lounge and the administrative offices. There will be two outdoor swimming pools, a landscaped patio and private parking areas for 500 cars. Estimated cost: \$2.5 million



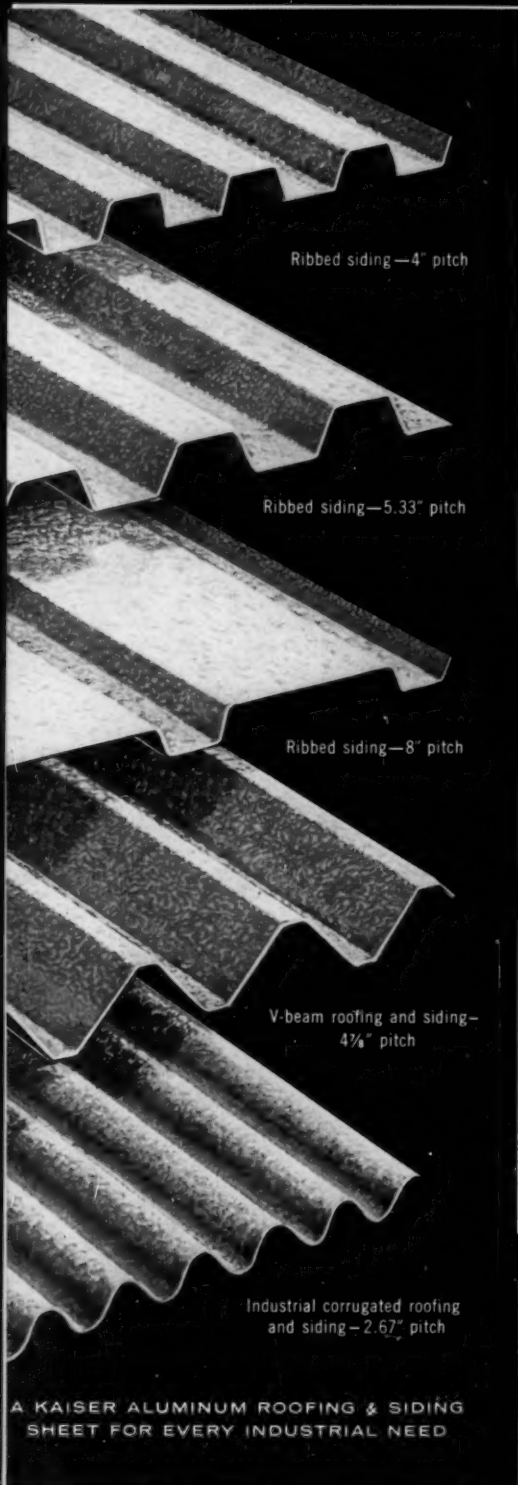
LABORATORY FOR AMERICAN CYANAMID—A product development laboratory and (background) pilot plant for the Plastics and Resins Division, adjoining Cyanamid's plastics production facilities at Wallingford, Conn.; Pedersen and Tilney, architectural consultants to Cyanamid's Engineering and Construction Division; W. J. Megin Inc., general contractor. The laboratory will be 260 by 160 ft, the pilot plant 60 by 60 ft; both are designed for later expansion. For the present, the facilities will employ about 70

GRAND CENTRAL CITY—The world's largest commercial office building (and only the Pentagon offers more floor area), to be erected by Erwin S. Wolfson, Herbert Scheftel, Stuart Scheftel and Alfred G. Burger on that much-eyed site adjoining New York's Grand Central Terminal on which the Grand Central Terminal Office Building now stands; Emery and Roth and Sons, Architects; Diesel Construction Company, general contractor. Plans for the Grand Central City project retain the Terminal itself, which has been threatened by some of the earlier proposals for the site. The new building, to cost an estimated \$100 million, will contain more than three million sq ft of space on 50 floors. The street level will provide for an expansion of the Terminal's baggage facilities and other services, and moving stairways will provide direct access from the Terminal. Construction, to get under way next year, will not seriously interfere with train operation; intricate scheduling and an ingenious structural system being developed by engineer James Ruderman are expected to keep interruptions of service to a minimum. Façade will be aluminum and glass



GLASS TOWER FOR TOLEDO—A 14-story, 120-ft-square office building for the Libbey-Owens-Ford Glass Company, to be centered in a landscaped plaza in a block 270 ft by 234 ft, will be Toledo's first major new downtown office building in 30 years; Skidmore, Owings and Merrill, architects; George A. Fuller Company, general contractor. It has been designed as a "tower of glass" to dramatize the owner's products, with windows of gray plate glass and spandrels of black opaque glass framed in aluminum; glass will be used also in movable interior partitions, in mosaic facing the service core and the main lobby ceiling, and for the entrance doors





Ribbed siding—4" pitch

Ribbed siding—5.33" pitch

Ribbed siding—8" pitch

V-beam roofing and siding— $4\frac{1}{4}$ " pitch

Industrial corrugated roofing and siding—2.67" pitch

A KAISER ALUMINUM ROOFING & SIDING SHEET FOR EVERY INDUSTRIAL NEED

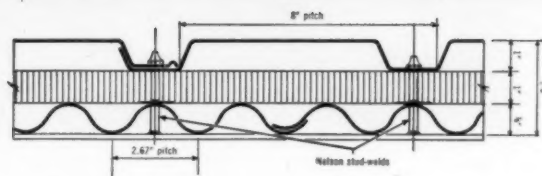
These roofing and siding sheets are available in a selection of thicknesses, finishes, widths, lengths. Flashing sheet, pre-formed flashing, closure strips and other accessories also available. For full information, see Sweet's 1958 Architectural File 8b/Ka or Industrial Construction File 4b/Ka. Complete specifications provided on request.

FORM, FUNCTION AND EXAMPLE: LOW-COST INSULATED

The Standard Register Co., Manufacturing Plant, York, Pa.
Engineers & Designers: Noonan Engineering Corp.
General Contractor: R. S. Noonan, Inc.
Insulated Aluminum Wall Sub-Contractor:
Carew Steel Company



**TYPICAL SECTION—
STANDARD REGISTER
WALL ASSEMBLY**



Outer skin: 8" pitch ribbed siding
Inner skin: 2.67" pitch industrial corrugated siding
Fastening system: Nelson Set-Lock studs

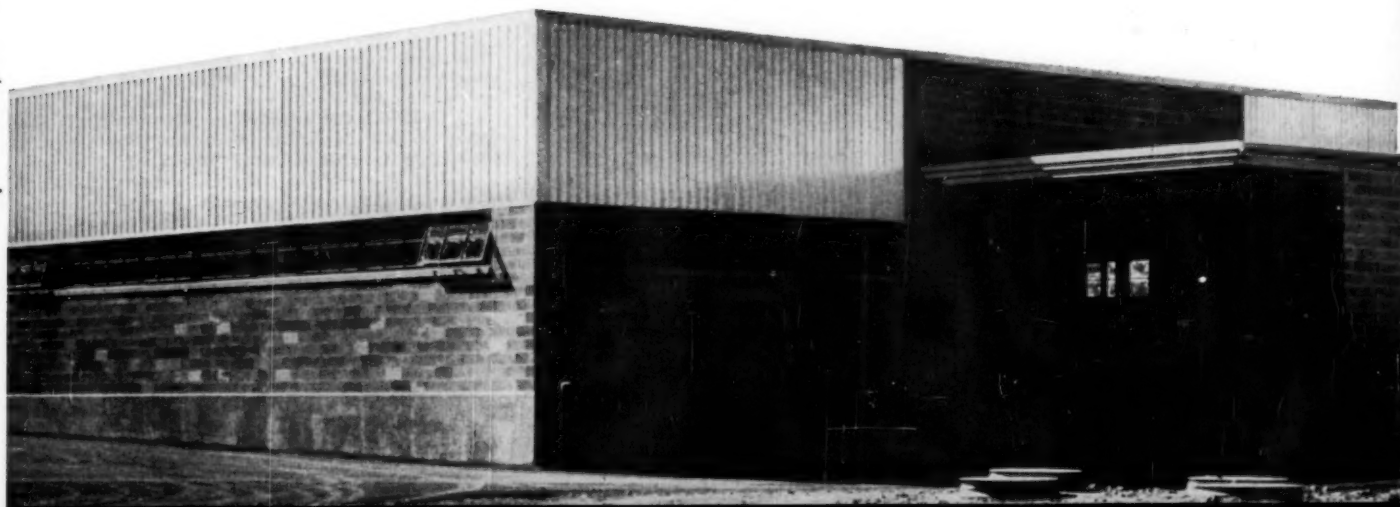
TYPICAL SECTIONS...OTHER INSULATED ALUMINUM WALL ASSEMBLIES

Flexibility of insulated aluminum wall design is made possible by Kaiser Aluminum's wide range of siding sheets in ribbed, corrugated and V-beam configurations — plus its selection of quick, dependable fastening systems.



FLEXIBILITY-CONCEIVED IN ALUMINUM!

ALUMINUM WALLS FOR NEW STANDARD REGISTER PLANT



Installed at a labor and materials cost of \$1.50 per square foot, Standard Register's new insulated aluminum sandwich walls were quickly fabricated *at the site* from a layer of 1"-thick rigid glass fiber insulation—flanked by rugged sheets of lightweight Kaiser Aluminum ribbed and industrial corrugated siding.

Extra Economies

Their *extreme light weight*, from 1 to 1.5 pounds per square foot, reduces dead load—effecting many savings throughout the building.

Their *minimum thickness*, as little as 2¾" overall, extends usable floor space. And their *high insulation value* (U Factor of 0.16 with 1" thick glass fiber insulation) by lessening the load on heating and air conditioning equipment, promises reduced operating costs for the life of the structure.

Minimum Maintenance

In addition, because the siding sheets for these sandwich walls are formed of a special clad Kaiser Aluminum alloy, they provide *extra* resistance to corrosion — will keep their good looks for years with little maintenance, and without the need of paint.

Reliable counsel on insulated aluminum walls is available from a qualified Architect's Service representative through the Kaiser Aluminum sales office nearest you. Consult the yellow pages of your telephone directory; or, write for catalog: Kaiser Aluminum & Chemical Sales, Inc., 919 N. Michigan Avenue, Chicago 11, Illinois.



THE BRIGHT STAR OF METALS

See "MAVERICK" Sunday evenings, ABC-TV Network. Consult your local TV listing.

APPROVED APPLICATORS

Additional information on Kaiser Aluminum industrial building products may also be obtained from:

WALTER G. MITCHELL COMPANY

2303 Jefferson Street
Torrance, California
Mr. W. G. Mitchell, Pres.

GREW STEEL COMPANY

R. D. S.
York, Pennsylvania
Mr. Paul Kohn, Treasurer

DALE BENT, INC.

1912 West Grant Street
Phoenix, Arizona
Mr. Dale Bent, Pres.

Wm. C. KUTZER COMPANY

3340 North 10th Street
Philadelphia, Pennsylvania
Mr. William C. Kutzer, Pres.

HUGHES STEEL ERECTION CO.

43 Leon Street
Boston 15, Massachusetts
Mr. John Hughes, Pres.

ALBETSON ROOFING & SHEET METAL COMPANY, INC.

Highland & Fenwick Streets
Allentown, Pennsylvania
Mr. Charles C. Grever, Treas.

GALLERY INDUSTRIES, INC.

130 Hillview Lane
Pittsburgh 37, Pennsylvania
Mr. David C. Starr, Pres.

METAL PRODUCTS, INC.

106 Birney Street
Greenville, South Carolina
Mr. Thomas Burdette, Vice Pres.

FRASER EDWARDS COMPANY

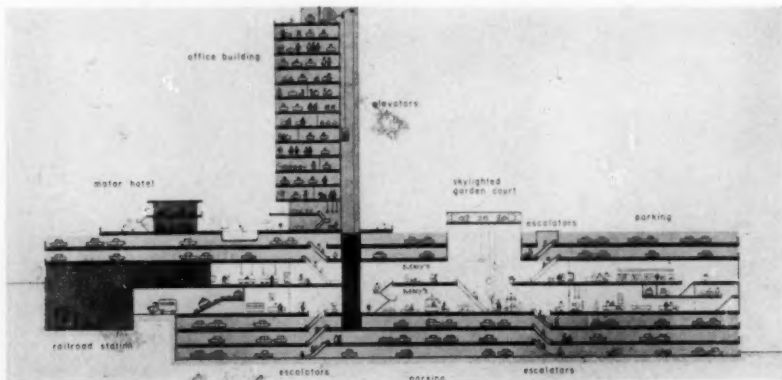
2412 Harrison Street
San Francisco, California
Mr. J. S. Fraser

THE YOUNG COMPANY

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Charlotte, North Carolina
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SOUTHERN FABRICATING, INC.

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Staley, North Carolina
Mr. Forrest A. Paschal
Mr. R. F. Paschal, Jr.

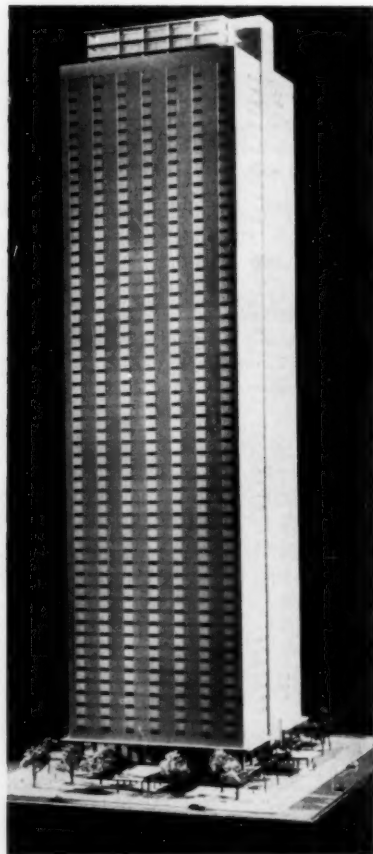
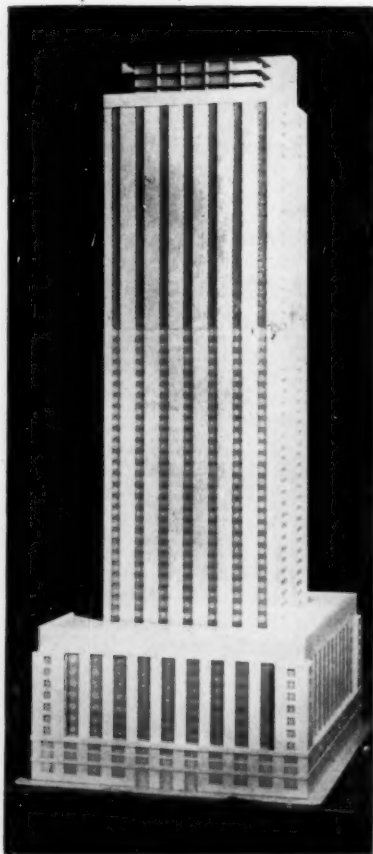
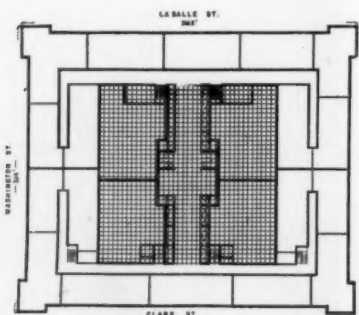


SKYSCRAPER SHOPPING CENTER

What is described by Victor Gruen Associates, Architects, as "the nation's first urban shopping center" is planned for downtown New Rochelle in Westchester County, N. Y. Westchester Terminal Plaza (sketches at left) will straddle the main line of the New York, New Haven and Hartford Railroad, about one block east of the line's present station. At an estimated cost of \$41 million, the 24-level structure will provide 70 retail outlets, including a complete Macy's New York department store, a 100-room hotel, a railroad station, a bus terminal, a 15-story office building, and the world's largest parking garage, housing 5200 cars. Mr. Gruen has described the New Rochelle plans as a "conceptual guide" for urban areas seeking to eliminate downtown deterioration: the first urban center with all the characteristics of a regional shopping center. The vertical scheme here proposed requires only 12 acres as against an estimated 80 acres for a comparable suburban shopping center developed along the usual horizontal lines. The project will be built by Westchester Terminal Plaza Inc., headed by Lawrence Zirinsky, president. Construction starts next winter.

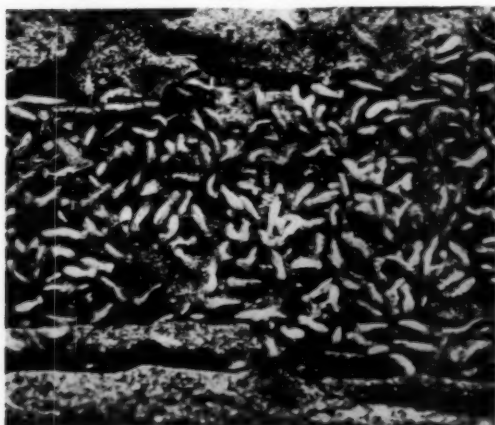
THE SITE WOULD BE AN AIR WELL

A 44-story Consolidated Courts Building to be built in the air well of the existing City-County Building in Chicago was proposed by the architectural firm of Friedman, Alschuler & Sincere at a luncheon commemorating the firm's fiftieth anniversary in May. The present building would remain intact until some future date when a civic center such as the Fort Dearborn project would provide space for a new city-county building; the old building would then be demolished and its site developed as a landscaped plaza for the Consolidated Courts Building. (Photos at right show how project would look before and after demolition of old building; below, sketch of typical lower floor: cross-hatched area indicates space for new courtrooms proposed building would provide.) The new building, planned for eventual expansion to 64 or 84 stories if required, would occupy an area of 200 by 200 ft.



"Decay and Termite Damage in Houses"

Prepared by the DIVISION OF FOREST INSECT INVESTIGATIONS, Bureau of Entomology and Plant Quarantine, Agricultural Research Administration; and the DIVISION OF FOREST PATHOLOGY, Bureau of Plant Industry, Soils, and Agricultural Engineering.



Worker Termites—Natural size

the decay fungi weaken or destroy the fiber. These cannot work fast at temperatures below 55 to 60° F., and *not at all in dry wood*. There is no such thing as 'dry rot'; decayed wood is often dry after it has rotted, but not while the decay is taking place."

"The decay fungi soften the wood and in the final stages cause it to shrink and crack or crumble."

Scientific multiple aluminum, by insulating against vapor and heat flow, keeps the area beyond the insulation colder and drier, thus retarding fungus growth and timber rot.

"10 Essential SAFEGUARDS AGAINST TERMITES AND DECAY"
will be found in U.S. Bulletin 1993,
obtainable free by sending the coupon.

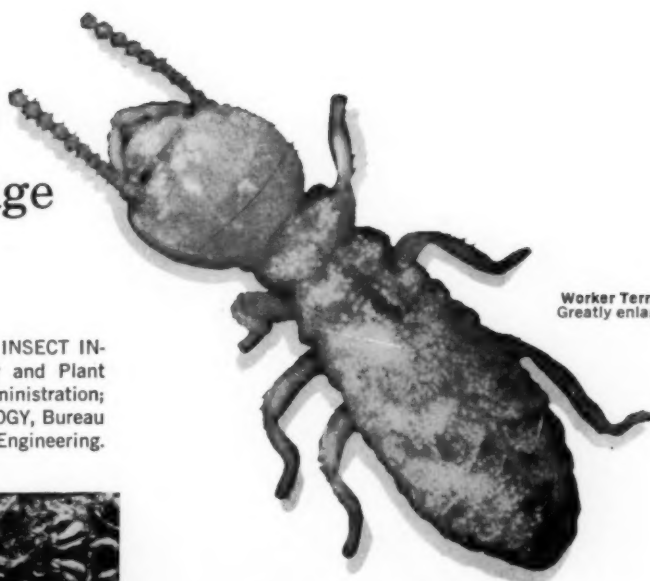
Infra Insulation Inc., 525 Bway., N. Y., N. Y. Dept. — R-7
Manufacturers of Scientific Multiple Aluminum In-
sulation, which retards Fungus Growth and Timber Rot.

Please send Govt. Bulletin No. 1993.

Name _____

Firm _____

Address _____



Worker Termite
Greatly enlarged

(Excerpts—Exact Quotation)

"TERMITES are the most destructive of the insects that attack wood in houses. They eat the interior of the wood and may cause much damage before they are detected."

"Wood damaged by termites can be easily distinguished from decayed wood. Termites honeycomb the wood with definite tunnels; these are separated by thin partitions of sound, firm wood."

"Wood decay is caused by fungi, which are plants consisting of microscopic threads . . .



A water-conducting fungus attacked untreated oak piers of this 5 year old house and continued to decay sills, joists, and studs to a height of 6 ft.

USDA Photographs

AIRLINE TICKET BUREAU . . .



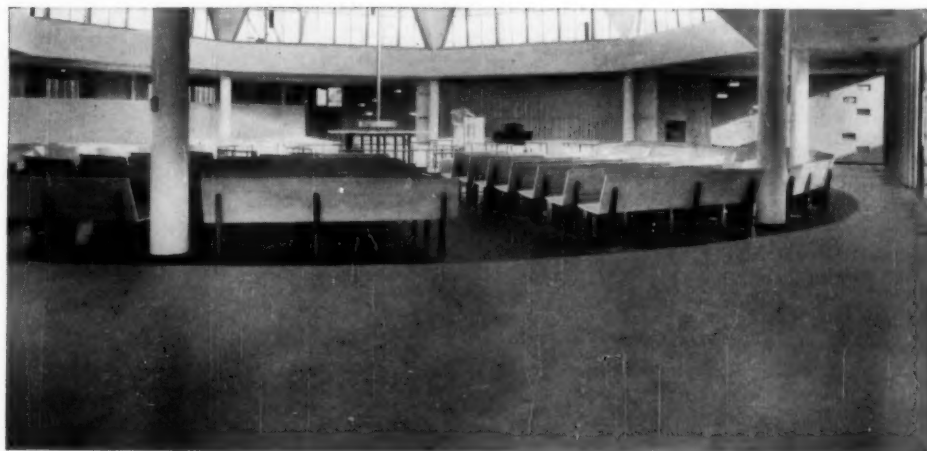
MODERN ELEGANCE

The elegant atmosphere of this airline bureau is the sum of a perfectly harmonized interior. One of the most important features is the floor of Armstrong Vinyl Corlon. The delicately flecked Granette sheet plastic perfectly complements the simple Japanese design. Its smooth, glistening surface is easy to maintain. Because it's a sheet-type flooring, there's a minimum of dirt-catching joints.

Japan Air Lines, Rockefeller Center Ticket Office, NYC
architect: Raymond and Rado, NYC, and Junzo Yoshimura, Tokyo,
associated architects

CHURCH . . . OFFICES

the flooring spec: Armstrong Vinyl Corlon



DESIGN FLEXIBILITY

Note closely this circular floor design created with two contrasting colors of Armstrong Sheet Vinyl Corlon. Because Armstrong Vinyl Corlon is made in rolls 6 feet wide and in any practical length, curved designs like this are easy and economical to achieve with simple scribing of the material.

St. Peter's Lutheran Church, Minneapolis

architect: Ralph Rapson, Douglas Baird, associate

PRACTICAL STYLING

Over 24,000 sq. ft. of Armstrong Vinyl Corlon was selected for the new IBM offices. The Terrazzo styling in Vinyl Corlon hides dirt and scuff marks. The floor stays attractive all day. At night, the smooth, almost seamless expanse of Vinyl Corlon permits maintenance crews to do a thorough cleaning job quickly.

IBM, 425 Park Ave., NYC

architect: Eliot Noyes and Associates



Armstrong Sheet Vinyl Corlon gives excellent service in residential and light commercial interiors. It is dimensionally stable; highly resistant to grease and alkalis; long wearing. The colors are in-laid right through to the backing. Vinyl Corlon comes in a variety of colors and stylings. Armstrong Vinyl Corlon with the exclusive, alkali-resistant Hydrocord Back is the only sheet flooring recom-

mended for subfloors below and on grade, and on lightweight aggregate concrete. Armstrong Architectural-BUILDER Consultants will help you decide on the best flooring spec for any interior and make available to you the services of the Armstrong Research Center and Decorating Bureau. Call your Armstrong District Office or write to Armstrong Cork Company, 307 Rock Street, Lancaster, Pennsylvania.



Armstrong FLOORS

Approximate Installed Prices per Sq. Ft. (Over concrete, minimum area 1000 sq. ft.)

20¢ to 35¢	Linoleum Tile Asphalt Tile, 1/8" (A, B, C, D) Linoleum, light gauge Asphalt Tile, 3/16" (A, B)	35¢ to 45¢	Linoleum, standard gauge Asphalt Tile, 3/16" (C, D) Linoleum, 1/8" ("BattleShip") Greaseproof Asphalt Tile Cork Tile, 3/32"	45¢ to 60¢	Corlon (Sheet Vinyl) Linoleum, 1/8" Cork Tile, 1/8" Excelon Tile (Vinyl-Asbestos) 1/8"	60¢ to 70¢	Rubber Tile, 1/8" Cork Tile, 3/16" Linoleum Corlon (Hydrocord Back)	70¢ to 90¢	Custom Corlon Tile (Homoge- neous Vinyl) 3/32", 1/8" Cork Tile, 5/16" Rubber Tile, 3/16"	95¢ to \$1.30	Custom Vinyl Cork Tile Imperial Custom Corlon Tile
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FOUR BUILDINGS GET SOUTH ATLANTIC A.I.A. AWARDS OF MERIT

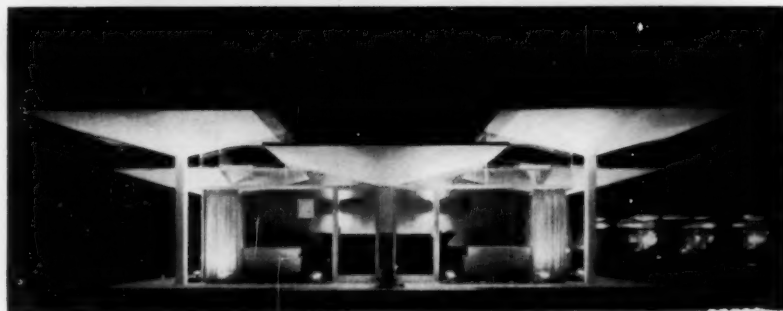
Top honors in the architectural competition sponsored this spring by the South Atlantic district of the American Institute of Architects went to the four buildings shown on this page. They were selected to receive Awards of Merit for architectural excellence by a jury composed of Igor Polevitzky, Miami; Heyward Singley, Columbia, N. C.; and William Arnett, Gainesville, Fla. Honorable Mentions were given for buildings by Alfred Browning Parker; James Norman Pease Jr.; F. Carter Williams, M. C. Smith and T. G. Williams; Edwin T. Reeder Associates; Harry Burns and George Fisher; Ralph Twitchell and Jack West; Stefan Zacher; and Morris Lapidus.



Galloway's Furniture Showroom, Tampa; Mark Hampton, Architect; Chester Mabry Construction Co., General Contractor



House for Builders Thyne and Swain, Sarasota; Edward J. Seibert, Architect; Thyne and Swain, General Contractor



Warm Mineral Springs Inn, Venice, Fla.; Victor Lundy, Architect; Spear, Inc., General Contractor

Tourist Center, Florida Silver Springs; Victor Lundy, Architect; John Rasmussen, General Contractor



ANNOUNCING THE NEW

Superior Standardline

HOLLOW METAL DOORS, FRAMES,

BORROWED LIGHT AND SIDELIGHT PARTITIONS

Quality Standards—never before available in stock units. Superior Standardline maintains all the design and heavy gauge metal construction features for which Superior custom units are so well known.

Delivery service—Superior Standardline units are available through local representatives in every part of the nation. Deliveries are prompt. All engineering delays due to custom drawing and construction are eliminated.

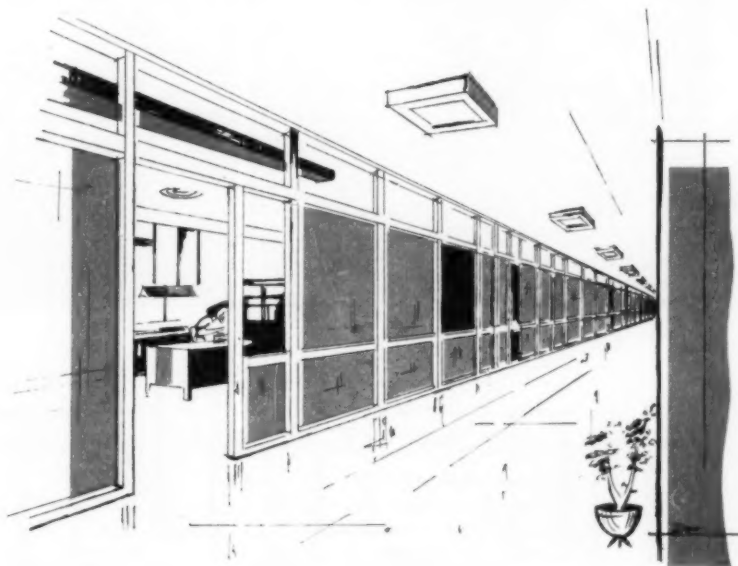
Versatility—Superior Standardline units come in a wide variety of heights and widths allowing a freedom of design previously possible only with custom installations. Your imagination is the only limitation.

Hardware adaptability—Superior Standardline may be installed either with Superior's own hardware or with that of any nationally distributed lines. For greater flexibility, easier local maintenance and possible cost saving, Superior Standardline can be ordered without hardware.

Economy—Superior Standardline units are priced substantially lower than our custom-made equivalents, permitting installation of this quality equipment in slab-on-grade jobs, alterations, and other projects where cost or delivery schedules are decisive factors.

See the following pages for full details and specifications.

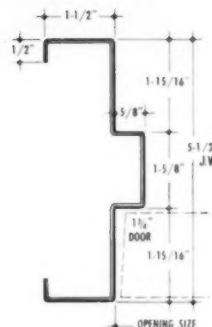
... the quality of custom construction
... the freedom of custom design
combined with "stock" economy and fast delivery



Superior Standardline Corp. Affiliate of: SUPERIOR FIREPROOF DOOR & SASH CO., Inc. 4175 Park Avenue, New York 57, New York

Superior Standardline FRAMES

are fabricated from 16 gauge prime quality steel sheets, formed to profile shown, mortised, reinforced, and drilled & tapped for three $4\frac{1}{2}$ " x $4\frac{1}{2}$ " standard weight template hinges and a universal strike. All frames are reinforced only for surface closers and brackets. Strike jamb stops are pierced for two rubber bumpers which will be furnished loose with the frame. Strike and hinge reinforcements are protected by mortar guards inside the frame. Frames are unit construction with neat, mitered corners carefully factory welded and ground smooth. Shipped with one shop coat of a fine grade, rust resistant, light gray primer automatically applied and oven dried for field finishing by others. Provisions are made for anchoring frames to the floor and for all standard wall conditions.



ORDER CODE

FS

30

70

RH

ELEVATION

Width and height of borrowed light may be any combination of sizes shown at right, with the maximum opening width dimension 6'0".

With integral 2'0" transom, series 70 only.

STANDARDLINE unit entrances are available with 3'4" x 7'0" door opening and integral 1'0"-1/2" sidelight adjoining, only. Unit entrances may be ordered with or without integral 2'0" transom. Specify hand when ordering, e.g. UET-LH.

OPENING WIDTH

2'0"
2'4"
2'6"
2'8"
3'0"
3'4"
3'8"
4'0"
Pairs
4'0"
5'0"
6'0"
6'8"

OPENING HEIGHT

Frames and Sidelights are available in series 68

(6'8" door opening height)
and series 70
(7'0" door opening height)

Transom units available in series 70 only.

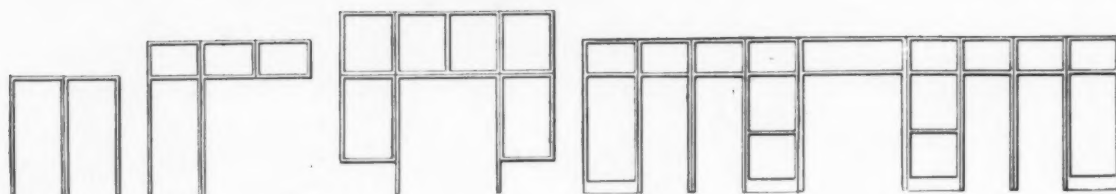
HAND

Determined by position of hinges when opening is viewed from the outside.

LH

RH

Outside



A simple, positive, patent-protected interframe fastening allows STANDARDLINE frames, sidelights and borrowed lights to be used in combinations with unrestricted freedom of design. Continuous runs, inside and outside corners are practical and feasible. For further design variation, glass may be used in conjunction with a choice of panel inserts such as vitreous plates or panels in unlimited color combinations, wood in natural or painted finishes, and all standard building panels (cement board, plasterboard, etc.).

Superior Standardline Corp. Affiliate of:
SUPERIOR FIREPROOF DOOR & SASH CO., Inc.
4175 Park Avenue, New York 57, New York

Superior Standardline DOORS

1 3/4" thick, are full flush design without visible seams or joints.

Doors are fabricated from 18 gauge, prime quality, cold rolled steel sheets reinforced with full length vertical truss stiffeners to insure flatness and rigidity.

Construction conforms to Underwriters Label Procedure, whether doors bear label or not. Full label service available for doors and frames on request.

Doors are sound deadened and insulated with non-sag compressed batts of mineral wool, resistant to fire, vermin, moisture, etc.

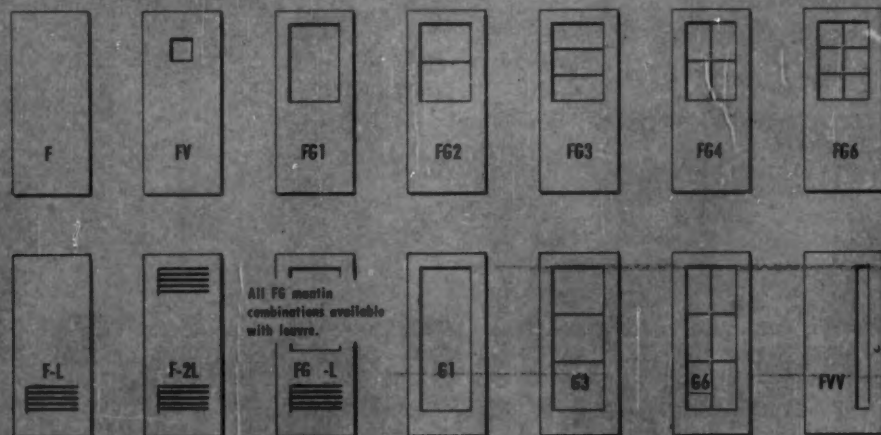
Doors are mortised, reinforced, drilled and tapped for three 4 1/2" x 4 1/2" standard weight template butts and a cylindrical lock 2 1/4" backset, equivalent to Federal Specification Series 161. All doors are reinforced only for surface closers.

Drilling and tapping for surface hardware to be done at the time of application in the field, by others. All hardware is to be applied in the field by others.

Doors are furnished with a fine grade, rust resistant, light grey primer, oven dried for field finishing by others.

WHEN ORDERING DOORS SPECIFY:

1 ELEVATIONS



2 OPENING SIZE

SUPERIOR STANDARDLINE doors are available in series 68 (for 6'8" opening height) and in series 70 (for 7'0" opening height)

Opening Widths

2'0"
2'4"
2'6"
2'8"
3'0"
3'4"
3'8"
4'0"

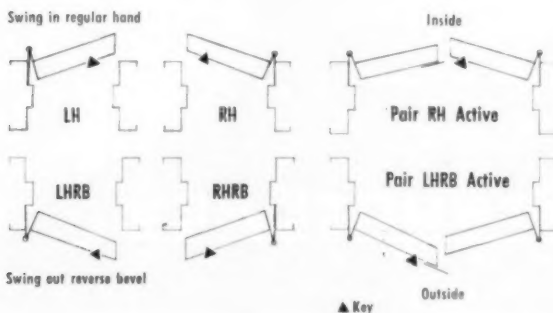
Door panels in opening widths as shown may be used singly or in pairs.

3 HAND AND SWING

Hand is determined by position of hinges when opening is viewed from outside.

Swing indicates whether doors swing into or out of area to be locked.

For pairs, specify active leaf. If both active indicate BA.



Superior Standardline

dealerships are currently being established.

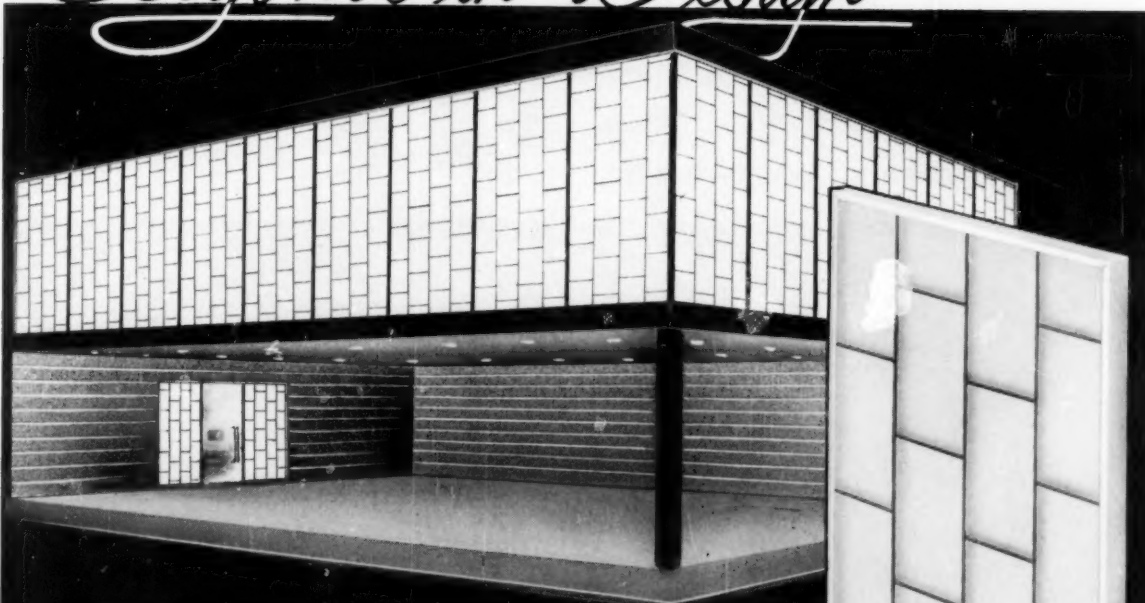
Many prime sales territories are still available. Inquiries should be sent to the Sales Manager, Standardline Division.

A technical catalog and ordering data sheets are being prepared. Copies are available without charge.

Address all correspondence to:

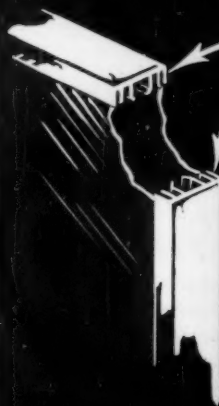
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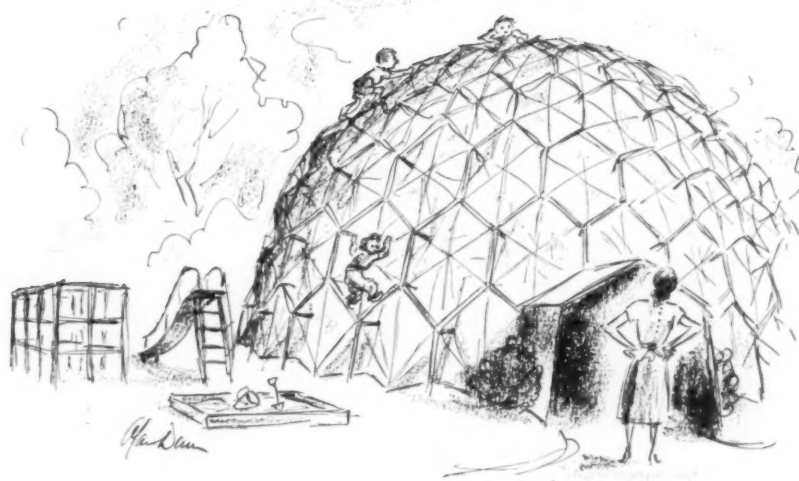


PANEL STRUCTURES

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45 GREENWOOD AVE. EAST ORANGE, NEW JERSEY

Meetings and Miscellany



—Drawn for the RECORD by Alan Dunn

"Children!"

Good News for Construction

As we go to press, F. W. Dodge Corporation announces that May 1958 set a new all-time high for dollar volume of construction contracts reported in any single month. Thomas S. Holden, Dodge vice chairman, said it was now evident that "construction is well past the bottom of the relatively mild recession it was experiencing in late 1957 and early 1958." George Cline Smith, Dodge vice president and economist, discusses construction trends on page 318.

Birthday Fete for Gropius

An all-day meeting and dinner held May 24 under the sponsorship of the Harvard Graduate School of Design Alumni Association honored Walter Gropius, former architecture chairman at the School and founder of the Bauhaus, on the occasion of his 75th birthday. Topic for the day's discussion was "Art in Architecture." Some 800 persons filled the Rindge School Auditorium in Cam-

bridge to capacity for the morning and afternoon panel discussions. After the afternoon session, members of the Walter Gropius 75th Birthday Committee, headed by Paul A. Coletti as chairman, met and agreed that a fund should be raised to promote a series of annual lectures at Harvard in honor of Dr. Gropius. The birthday dinner in the evening was held at the Harvard Club in Boston, with Serge Chermayeff, professor of architecture at Harvard, as master of ceremonies, and Mr. Coletti as speaker. "Today we are honoring Walter Gropius," Mr. Coletti said, "for his worldwide contribution to architecture and his leadership, which has inspired a new generation of American architects." Dr. Gropius himself spoke at the dinner (see page 9). Panel speakers at the morning session were G. Holmes Perkins, dean of the School of Architecture at the University of Pennsylvania; Robert A. Little, Cleveland architect and former president of the Harvard Graduate School of Design Alumni Association; and Paul Rudolph. The afternoon panel consisted of Dean José Luis Sert of the Harvard Graduate School of Design; Gyorgy Kepes; Costantino Nivola; and Hideo Sasaki. Excerpts from some of the speeches follow: Perkins—(on Gropius) "He has been a wonderful leader of a team of artists, and as you all know a team of artists is a difficult thing; he really succeeded in applying these basic principles of his own art to the education of the future artist: the architects, the industrial designers,

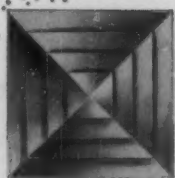
painters and sculptors; and through his contribution first in the Bauhaus, then here in this country, he has revolutionized in his own time the whole system of teaching architecture." . . . Sert—"I think it was greatly due to the leadership of men like Gropius and Corbusier that our work for the future, our architectural work, our planning work, was very, very greatly tied to the human problems; and that was only focused by people who besides being great artists are great human beings, and Gropius is one of them." . . . Kepes—"The basic tenet of Gropius' conviction, which was realized at the Bauhaus, was his very deep conviction that today we are again ripe enough to create a rich working community between all creative minds in the visual art field and create in this way a new community of objects around us, a new environment which may interest men to create again a new community of Man. . . . It seems to me what we have to do again today is to . . . try to reformulate again this basic, human need to create a new unity, a unity in terms of the present."

Mies Leaves I.I.T. Post

Ludwig Mies van der Rohe is retiring this year after 20 years as head of Illinois Institute of Technology's School of Architecture, although he may continue there as a lecturer and critic. He said that he felt it was time for younger people to carry on the work of teaching. His successor has not been appointed. No changes in the overall plan for the I.I.T.



Birthday celebration group—Joseph P. Richardson, president of the sponsoring Harvard Graduate School of Design Alumni Association; Gropius, and Dean José Luis Sert of the Graduate School of Design



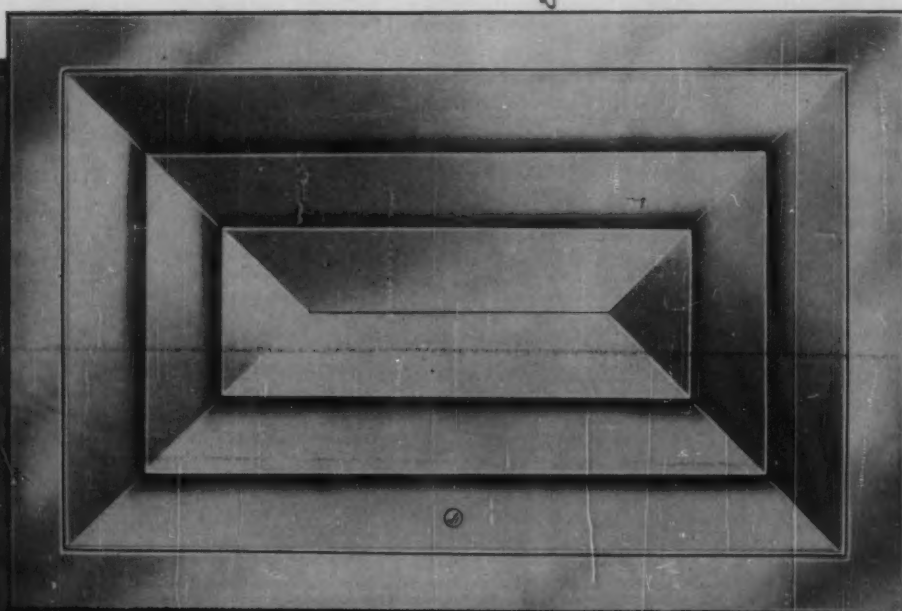
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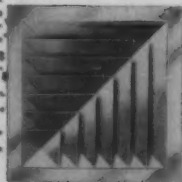
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Meetings and Miscellany

campus are contemplated, but because of Mies' retirement, some of the new buildings will be designed by other architects. An attempt will be made to have them conform to Mies' style.

New Jersey Architects Meet

The 58th annual convention of the New Jersey Society of Architects and the New Jersey Chapter, A.I.A., at Asbury Park, N. J., June 12-14, drew a total registration of 904, including more than 300 architects.

The convention theme was "Education in Architecture" with the emphasis on *continuing* education. The first of the three symposiums was concerned with architectural education at the college level, the second with postgraduate education before registration, and the third with post-registration study; the same panel presided over all three meetings.

Sixty-three buildings were entered in the architectural exhibition and nine awards of merit were made—four for completed buildings and five for projects. In the first classification the winners were: Kelly & Gruzen, New Rogers High School, Newport, R. I.; Kramer, Hirsch & Carchidi, Yardville Heights Elementary School, Yardville, N. J.; Jules Gregory, Orthodontic Office for David A. Slade, Doylestown, Pa.; Stanley J. Goldstein, Jortner residence, Alexandria, La. Awards for projected buildings went to Kelly & Gruzen, Frank Grad & Sons, Michelwright and Mountford, and (two) Kramer, Hirsch & Carchidi.

The following officers were elected to serve in the same capacity for both the New Jersey Society of Architects and the New Jersey A.I.A. Chapter: Jacob Shteir, President; Frederick A. Elsasser, First Vice President; John Scacchetti, Second Vice President; Adolph R. Scrimenti, Treasurer; Howard L. McMurray, Secretary.—*Florence A. van Wyck*



New Jersey meeting panel members were (left to right) Percival Goodman, F.A.I.A.; Dean Olindo Grossi, A.I.A., of Pratt Institute School of Architecture; Director Robert W. McLaughlin, F.A.I.A., of Princeton's School of Architecture; Thomas H. Creighton, A.I.A., editor of *Progressive Architecture*; Paul W. Drake, A.I.A.; William W. Caudill, A.I.A.; and Giorgio Cavaglieri, A.I.A.

Housing the Elderly at a Profit

Cost continues to be the major problem in the provision of an adequate supply of housing for elderly persons.

There is little question that an extremely large potential market for low-cost units, both rental and sale, exists and that the need will increase during the years ahead because of the growing number of older persons in society.

The nation's builders will meet this need, given the proper "legislative vehicle," and no particular architectural emphasis on designing for such housing is required.

These were some of the points brought out in the one-day discussion of housing senior citizens held at the National Housing Center in Washington, D. C., late in May. The meeting was sponsored by the National Association of Home Builders and attracted around 100 leading home builders, government officials and representatives of public interest groups.

One of the stronger points on design was introduced by Dr. George E. Beauchamp, Florida developer who has confined his activity to building an integrated community for young and old alike. In four years he has constructed 140 homes ranging in price from \$8000 to \$14,000. Here are some of his arguments:

—*Design for retirement.* The retired don't want to be alone together so set aside streets in a single community where children may live and where they may not live. This arrangement has "worked out perfectly" for the Florida developer, socially as well as economically.

—*Make individual homes for the elderly as easy to take care of as possible,* for both housewife and husband; and provide some ground around each unit. They like gardening.

—*Safety features are good.* Dr. Beauchamp believes, but builders and their architects should not make them a specialty of design. In his housing all units, for both young and old, have these features—and they are stressed as living features advantageous to all, not as particular aids for the infirm. He has eliminated steps and made occupants feel their absence constitutes an advantage for all.

—*Health and community facilities* are furnished for all, and Dr. Beauchamp looks upon these as a most important part of any housing development for the elderly. "I don't talk about them, I just provide them quietly."

The Florida development, with 25 per cent of its inhabitants young couples, has been constructed with local conventional financing almost entirely.

But low-cost construction has been on the side of Dr. Beauchamp, largely because of his location in the south. Others of the nation's builders, those who are seriously contemplating action in the field of housing for the aging in higher cost locations, are troubled with the need of keeping carrying charges to a minimum.

There were estimates, by Mrs. Mary Cleverly, specialist in the field for Federal Housing Administration, for one, that generally the cost of such housing must be reduced to \$40 to \$50 per month if the great demand is to be satisfied. It was apparent from builders' comments that this now is virtually impossible in many regions.

They were just as concerned, and very frank about it, over the profits to be allowed them. Said one builder: "I came to this meeting to learn how I can build housing for the elderly and make money and not be called before Congress to pay back some of the profit." The FHA 608 scandals of several years ago obviously were very much in the minds of the housers as they considered these problems at the May meeting.

There was no ready answer on this point, but FHA representatives did assure the builders that they are expected to make a reasonable profit in any project they undertake, and that pending legislation will improve their position in this regard.

A statement written by FHA Commissioner Norman P. Mason for the meeting carried this reference: "Let me make one thing crystal clear. Some of you have been reluctant to work on housing for the elderly because in one of its major approaches it is set up for a non-profit owner. This phase of the program refers to the operation—not the building. As a builder you can interest a non-profit group—a church, labor groups, etc.—and do the work for them and get paid properly. You can in the normal course of your business be of service to your community. You at no time need to become a part of the non-profit group."

The builders saw greater hope for them in a proposed amendment to the housing law which had received Senate Banking subcommittee approval at the time they convened to consider housing senior citizens. This defined housing as meaning eight or more new or rehabilitated living units, at least 50 per cent of which are specially designed for the

continued on page 288



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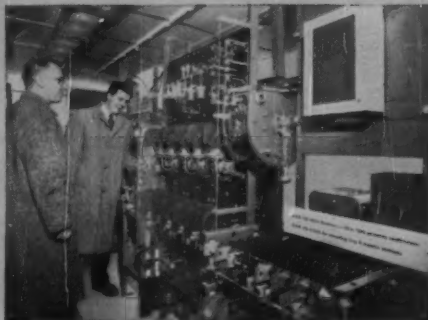
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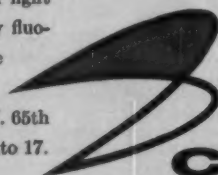
Movable wings open on the sides of the Coaches, exposing exhibits and providing spectator ramps. Special electro-hydraulic system raises brilliantly lighted canopies 8 feet above coachtop level for nighttime displays.

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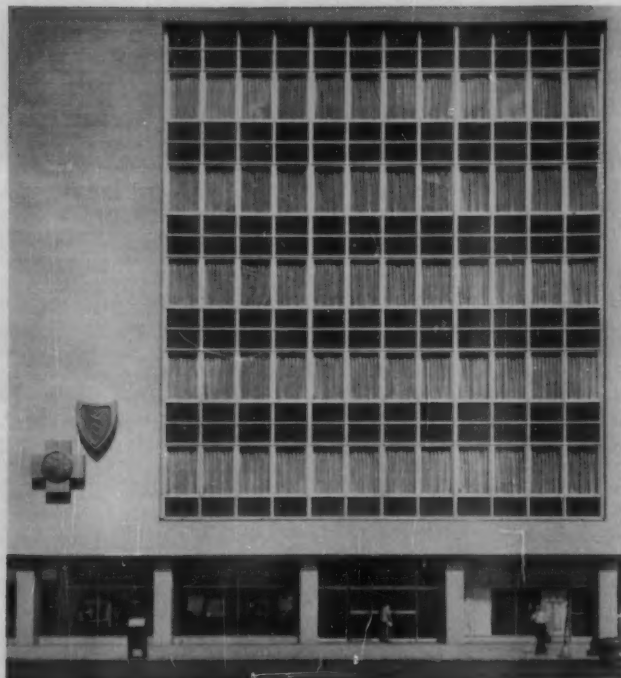
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A.S.P.O. HEARS REPORTS ON BRASILIA AND NEW WAYS TO THE CITY BEAUTIFUL

An unmistakable international flavor dominated the 49th annual National Planning Conference conducted in Washington in May by the American Society of Planning Officials.

The international activities report opened the meetings on Sunday, May 18, and events throughout the week's program concentrated attention on various aspects of metropolitan planning around the world.

Interest centered, for example, on the siting and planning of Brazil's new capital city, Brasilia, now being constructed some 500 miles to the northwest of the present center of government. Architect Lucio Costa of Rio de Janeiro was the honored guest at a ceremony at the Pan American Union building in which a \$10,-

000 model of the new city was presented to the Brazilian Ambassador to the United States. This model was built by students at Cornell University as a project in regional planning.

One of the two luncheon addresses was delivered by José A. Mora, secretary general, Organization of American States, who noted that in the last 100 years the spectacular growth of cities had produced a new phenomenon: the urbanized society. He characterized this change from rural to urban life in many countries of the world as "perhaps the most significant expression of our contemporary society."

The days of rural colonization are ended, Mr. Mora insisted, not only in the United States (temporarily at least) but also in Latin America,

where the stream of migrants and the caravans of families are converging not toward the country but toward the city and the suburbs.

One of the many panels on this year's program was devoted to a discussion of urban planning in Latin America. It touched on urban design, land controls and policies in urban areas, zoning and housing.

The bulk of the papers given and the many informal discussions concentrated on domestic planning problems, however. Key to these considerations was the address by Professor Philip M. Hauser, chairman, Department of Sociology, University of Chicago. He measured the pace for the conference at the outset by saying that the United States is experi-

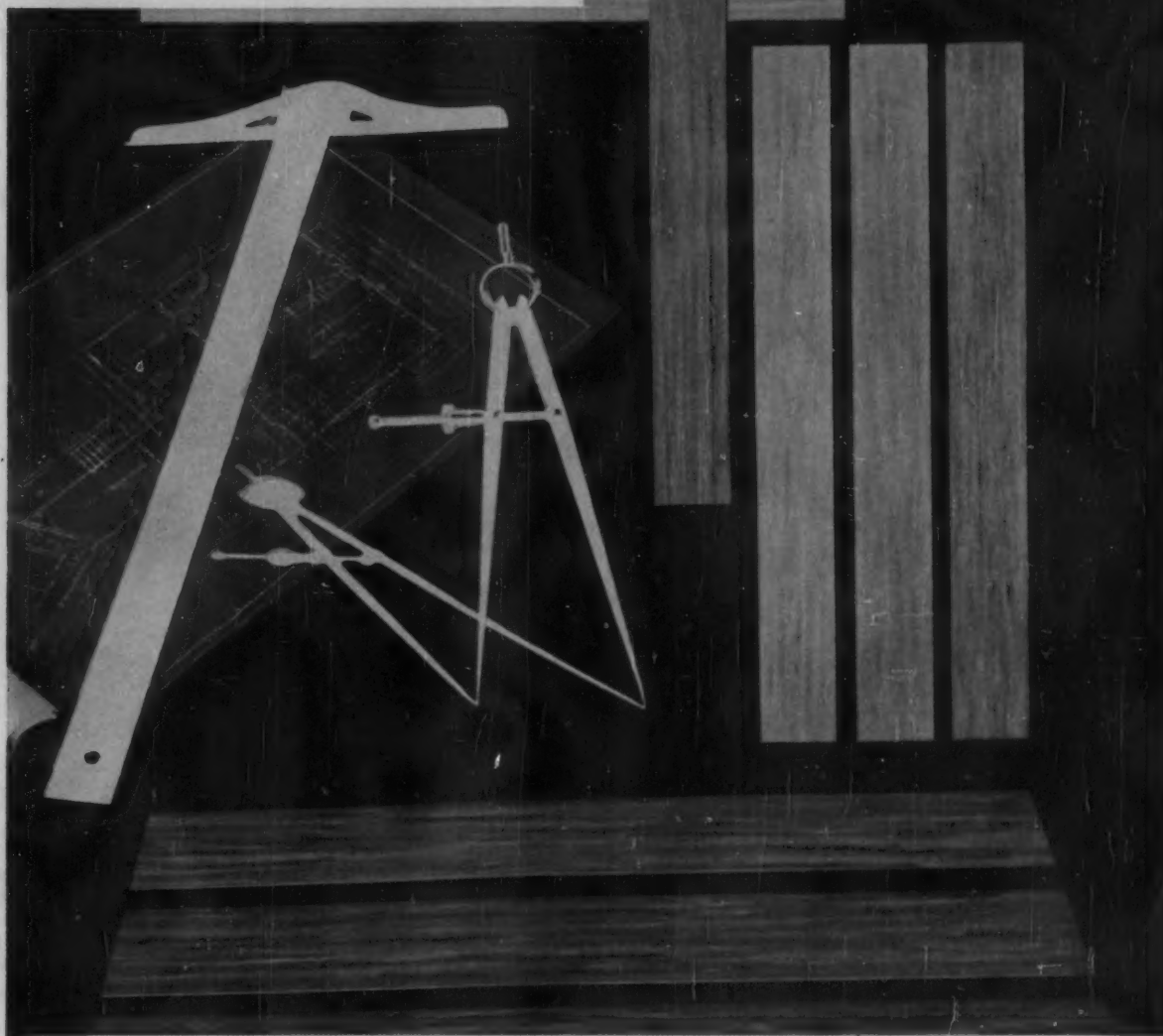
continued on page 290



A \$10,000 model embodying their concept of the new capital of Brazil was presented to the Brazilian Ambassador by architectural students of Cornell University as part of the program of the A.S.P.O. convention. The Cornell Brasilia scheme, shown here in photographs of the model and drawings, was regarded by the architect of the master plan of the real Brasilia, Lucio Costa, as "very interesting," "very excellent," though—perhaps the most provocative commentary—"more formal" in its approach than the scheme which is now under construction. Students' master plan is shown in drawing and model above; a typical neighborhood unit in model photograph at left; and a view of the central business district in drawing below



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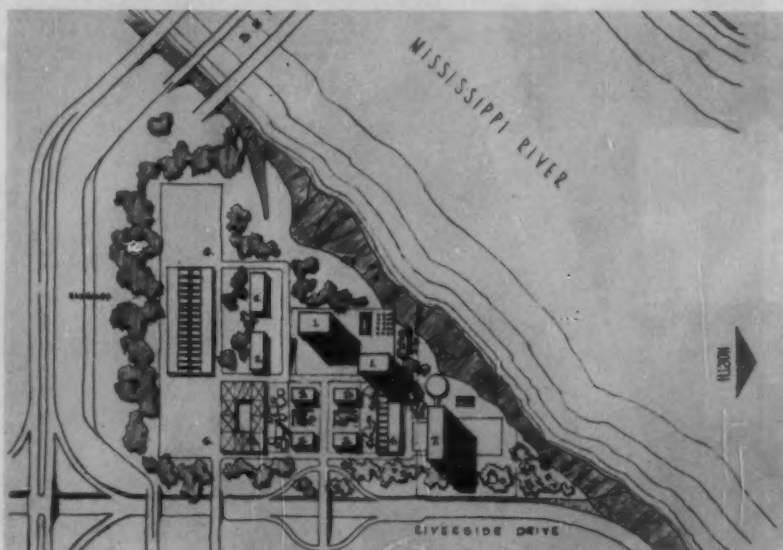


Above: aerial view of the Riverview site; bend in river occurs downstream from bridge

ARCHITECTURE, AND ARCHITECTS, SPARK URBAN RENEWAL PROJECT IN MEMPHIS

A scheme for the renewal of a river-front site in Memphis, Tenn., may be unique in the annals of urban renewal. For one thing, the architects in this case—the young firm of Mann & Harrover—were not only in on the ground floor; they were in large part responsible for the initial inspiration. And for another thing, the plan was initiated, under the leadership of realtor Robert Sanderson, by the property owners of the site for private development (as it turns out, they are hoping for Federal assistance, but this was a much later development).

The highly desirable Riverview site, on a 103-ft bluff overlooking a bend in the Mississippi, struck the architects and a few of the 30-odd owners as a good bet both as a profitable enterprise and as an enhancement to the city. Three points eventually convinced more than 90 per cent of the owners to join in the effort: the site, attractive and protected by roads and wooded areas; the plan, designed by Mann & Harrover; and the fact that the city had its eye already on this property as part of its own urban renewal plan. As matters stand now, the property owners are in the process of forming the Riverview Property Owners Re-Development Corporation, in which each of the owners will hold stock in proportion to his property; a study is being carried out to determine the



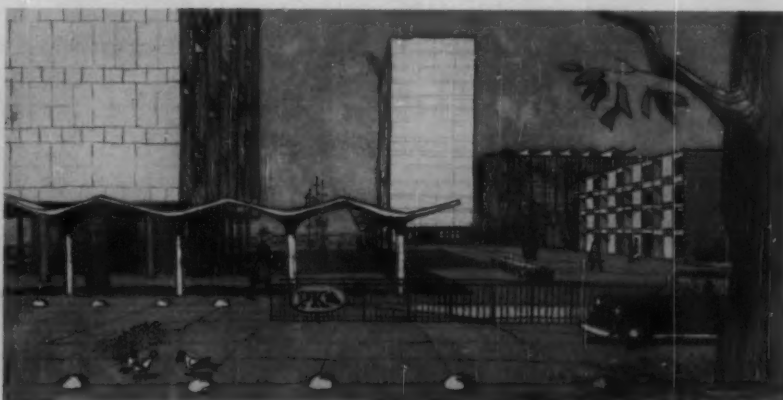
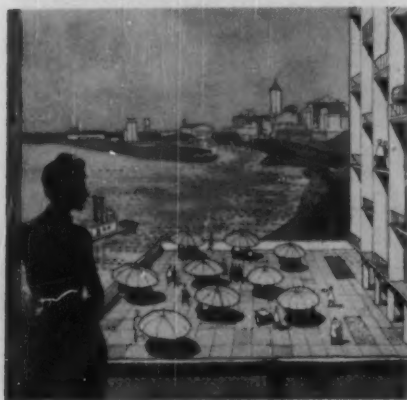
Legend: Apartment houses—1. 15-20 stories, 2. 4 stories, 3. 3 stories, 4. 1 and 2 stories; 5. shopping center; 6. surface parking; 7. Rivermont Club; 8. Ashburn City Park

ultimate worth of the development; and soil tests are about to be undertaken.

The plan itself is for a 30-acre site, minus 5.6 acres which have been acquired and are being developed independently by the Rivermont Club. A total of 600 apartment units will be contained in both low- and high-rise buildings, and will be served by the development's shopping center,

and by restaurants with views. Both underground and surface parking will be provided.

According to a recent report from the architects, interest and encouragement have been expressed by the Federal Housing Administration and the Memphis Housing Authority, and hopes run high among the owners that the scheme will come to fruition.



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FD-1482

SHELTERS FOR DEFENSE: U.S. CALLS ON ARCHITECTS AS FOCUS SHIFTS TO FALLOUT

It is hoped the architect will play an increasingly important part in the design and construction of shelters as the Federal government moves into a new program phase—shelters for protection against fall-out.

The Federal Civil Defense Administration now operates under a new shelter policy which throws more stress than ever on a do-it-yourself approach, and its officials believe that architects and engineers can make a major contribution in this field. FDCA Administrator Leo A. Hoegh, former Governor of Iowa, takes the view that the responsibility for provision of shelter from fall-out should be as much an individual matter as is the construction of shelter from weather.

So Governor Hoegh would like to see architects and builders assist individuals in incorporating fallout shelter design in both old and new construction.

"We are interested in designs which are attractive, economical, and have a dual use while at the same time affording effective protection,"

he told ARCHITECTURAL RECORD.

"Undoubtedly any number of architects can improve on the designs which we now have in being and others which we will subsequently prepare. (FCDA is planning construction of a number of prototype shelters in old and new buildings to protect against fallout.) We need their constant advice and counsel.

"It's a new field to most of them, of course. But as a starting point, we can provide them with the shielding information they need.

"When we get to the building of shelter prototypes that we have scheduled, we will be employing consulting architects and engineers to assist us. Of necessity this must be an effort by everyone in the architectural field.

"We certainly want to avoid the construction of white elephants—structures that would stand around for some time—many years, perhaps—with no other use. We want to make them so good that people individually and collectively will really build them."

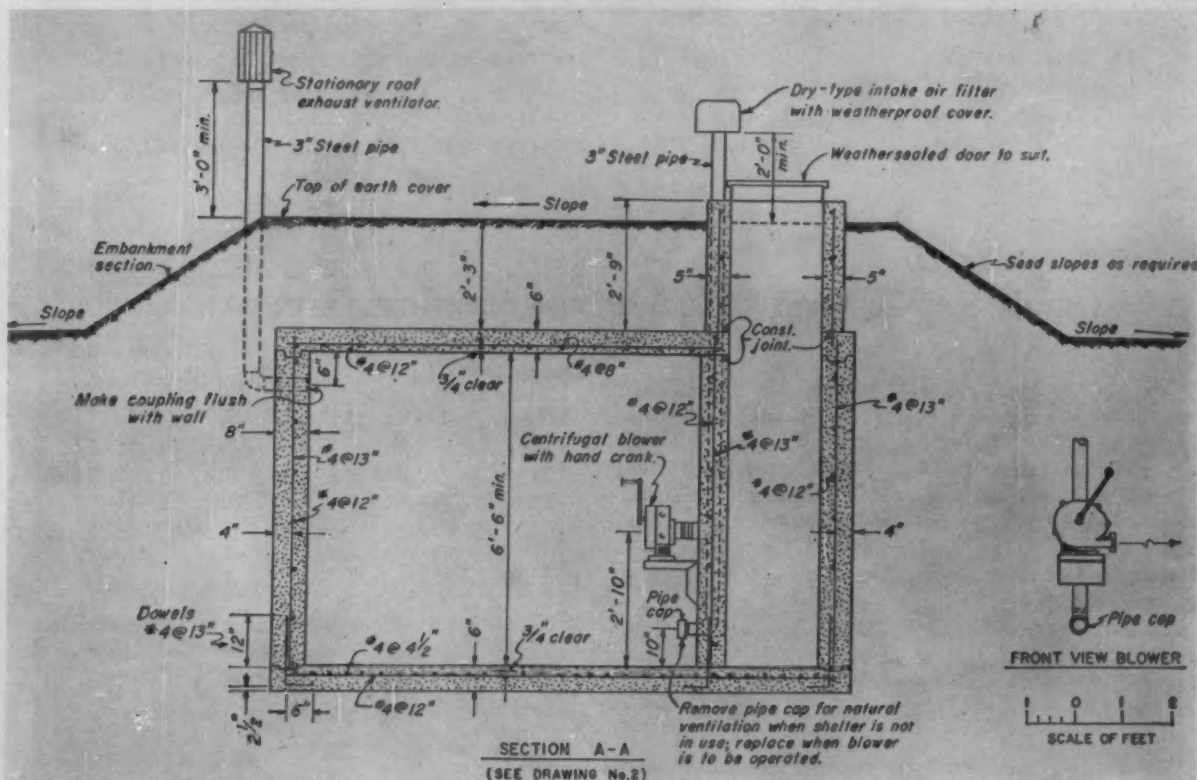
As a starting point for architects interested in this program the Federal Civil Defense Administration announces these constants, expressed as cumulative shielding, which will reduce original radiation to 1/5000, a harmless exposure: three ft of earth or two ft of concrete or eight in. of steel or three in. of lead.

The agency urged architects to bear in mind also that any commercial air filter in today's systems will satisfactorily filter fallout, admitting no particles larger than 1/2 micron.

In FCDA's new program, prototype structures will be incorporated in the following:

1. Underground parking garages.
2. Understreet shelters.
3. Subways.
4. The Federal highway program patrol and maintenance facilities.
5. Additions to existing schools and new schools, including such facilities as cafeterias, assembly space and classrooms.

continued on page 294



Drawing above (from Civil Defense Technical Bulletin TB-5-3) is longitudinal section of "basic underground family fallout shelter"—described as a "reinforced concrete

shelter to provide a high degree of radioactive protection for up to six adult occupants." Shelter would be covered by embankment 2 ft 3 in. high or placed the same

distance below ground level. Type of earth cover is optional: there is same amount of protection afforded. Any embankment must be treated to prevent erosion



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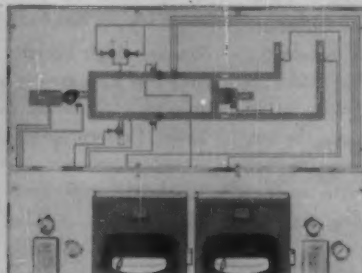
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Typical panel shows intricate pattern of Chase Copper Tube controlling air-conditioning system.



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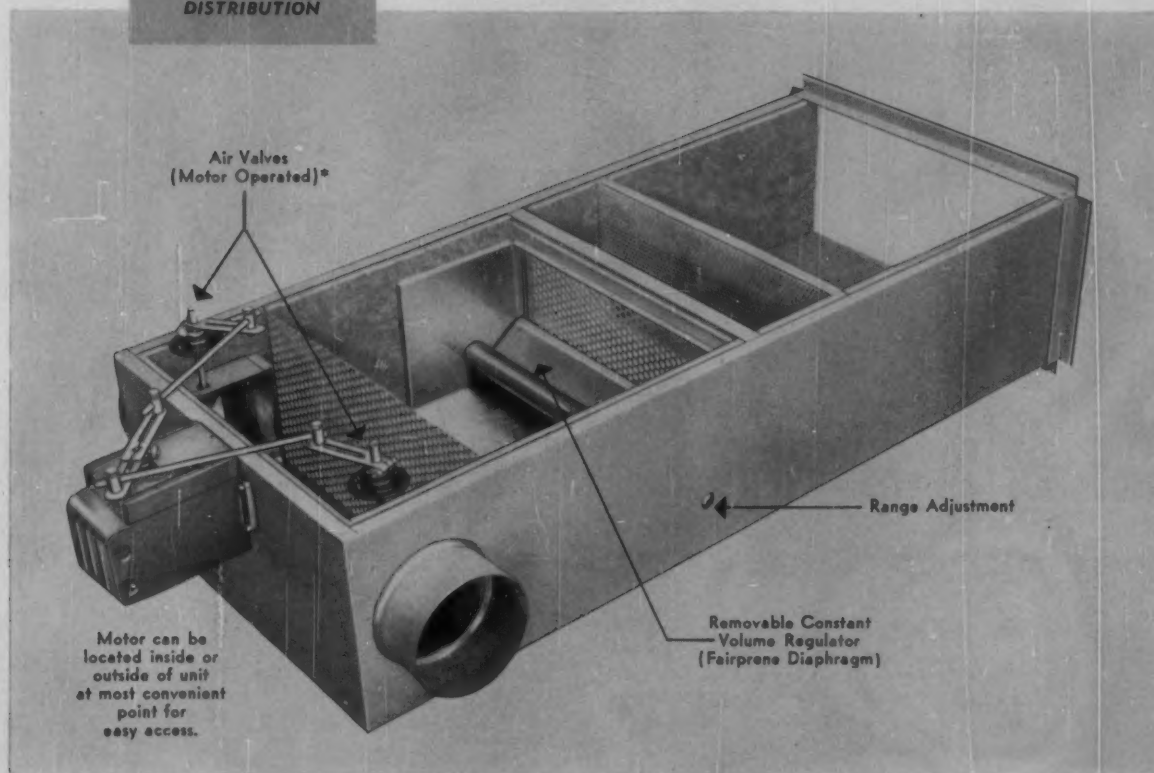
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Georgian Manor, Simcoe County Home for the Aged, Penetanguishene, Ont.; Craig and Zeidler, Architects. "The design," say the architects, "not only incorporates the functional and economic necessities but goes



further, attempting to create the intimacy of a residence and eliminate the cold, impersonal atmosphere of an institution." Location of Georgian Manor within the Town of Penetanguishene, "to encourage the aged

to participate in community life," was also affected by the wish for a non-institutional atmosphere. Plan is compact with bedrooms grouped around service core. Cost, \$216,286.51; 59 beds

CANADA'S HOUSING FOR AGED PROGRAM YIELDS NEW OPPORTUNITIES FOR ARCHITECTS

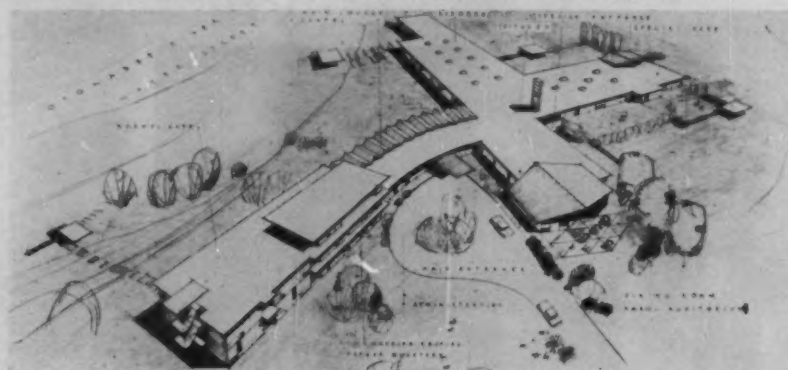
The problem of providing suitable accommodation for the aged has never been more acute. With the growth of cities, the three-generation households of Canada's former, predominantly rural, days, have virtually disappeared. Modern houses and apartments have barely enough room for parents and their children. There is no room for grandparents.

An added complication is that people today are more mobile, often moving from one city to another as their work demands. The old folk usually stay behind.

Loosening of family ties and traditions is occurring at a time when the number of elderly citizens is growing rapidly. In 1957 there were more than 1,250,000 people in Canada over the age of 65, an increase of nearly 250,000 since 1951. The number is expected to reach 2,400,000 by 1980.

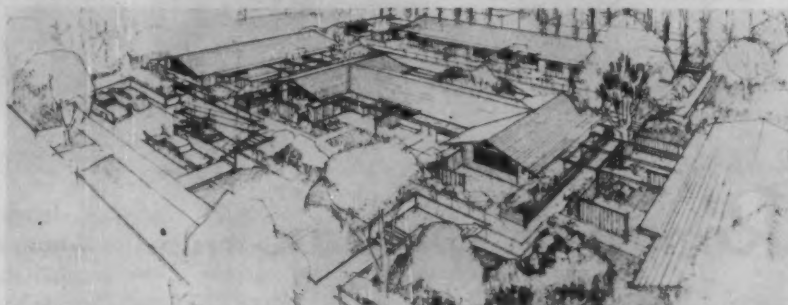
Leaving aside the destitute and the sick, for whom housing has always had to be provided, a good many old people are able to solve their shelter problems unaided. After retirement, they continue to live in their present houses or they buy new ones in keeping with their changed circumstances. Others rent quarters in hotels, apartments and boarding houses.

However, the financial resources of the majority of old people are



Home for the Aged, Peterborough, Ont.; Craig and Zeidler, Architects. This building, in its final stage, will accommodate 220 persons at an estimated cost of \$964,700. Effort was to make the most of a beautiful hilltop

site, to organize the plan so as to achieve minimum service traffic and to reduce the institutional feeling which might be created in a building of this type. Objective again is to create residential atmosphere

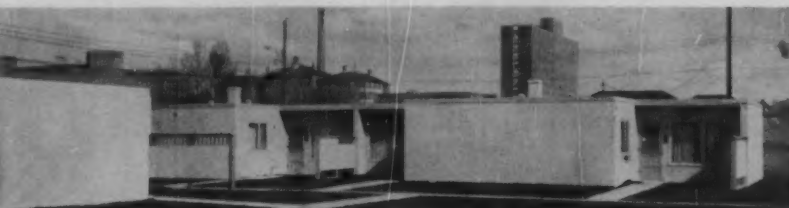


"Garden for the Blind," Victoria, B. C.; Charles E. Craig, Architect; Canadian National Institute for the Blind. A B.C. Centennial project, this low-rental housing de-

velopment for aged blind couples is the first of its kind in Canada. Feature is to be a fragrant garden for enjoyment of tenants and their friends. Cost, \$113,783; 14 units



Bow Valley Lodges, Calgary, Alta.; J. H. Cook and Associates, Architects. Project



consists of row house groups of four and six units, each unit accommodating one couple.

Walls are masonry and frame. Rent is approximately \$35 per unit per month

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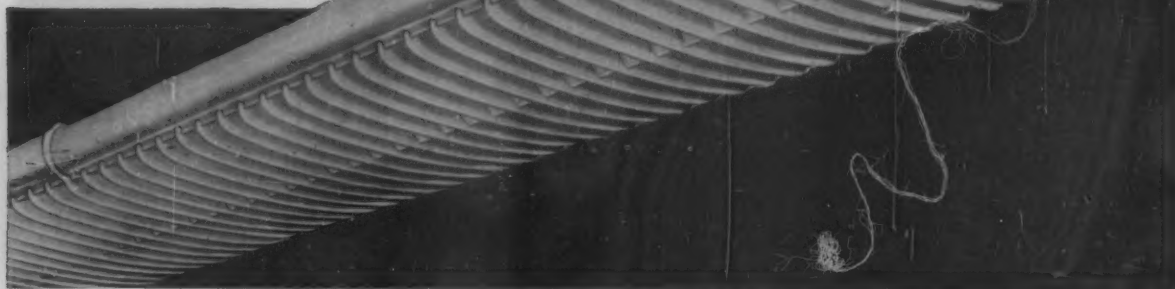
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limited. In a period of rising prices, those with fixed incomes experience difficulty in finding a place to live within their means. There has developed a need for low-cost housing designed specifically for the aged.

Many service clubs, charitable foundations and church groups have programs to build this type of accommodation. To assist them, the Federal government—through Central Mortgage and Housing Corporation—provides long-term loans at low interest rates to limited dividend companies set up for this purpose.



Calgary Lions Club Single Senior Citizens Quarters, Calgary, Alta.; Harry Williams, Architect. Project will consist of four buildings of 11 units each

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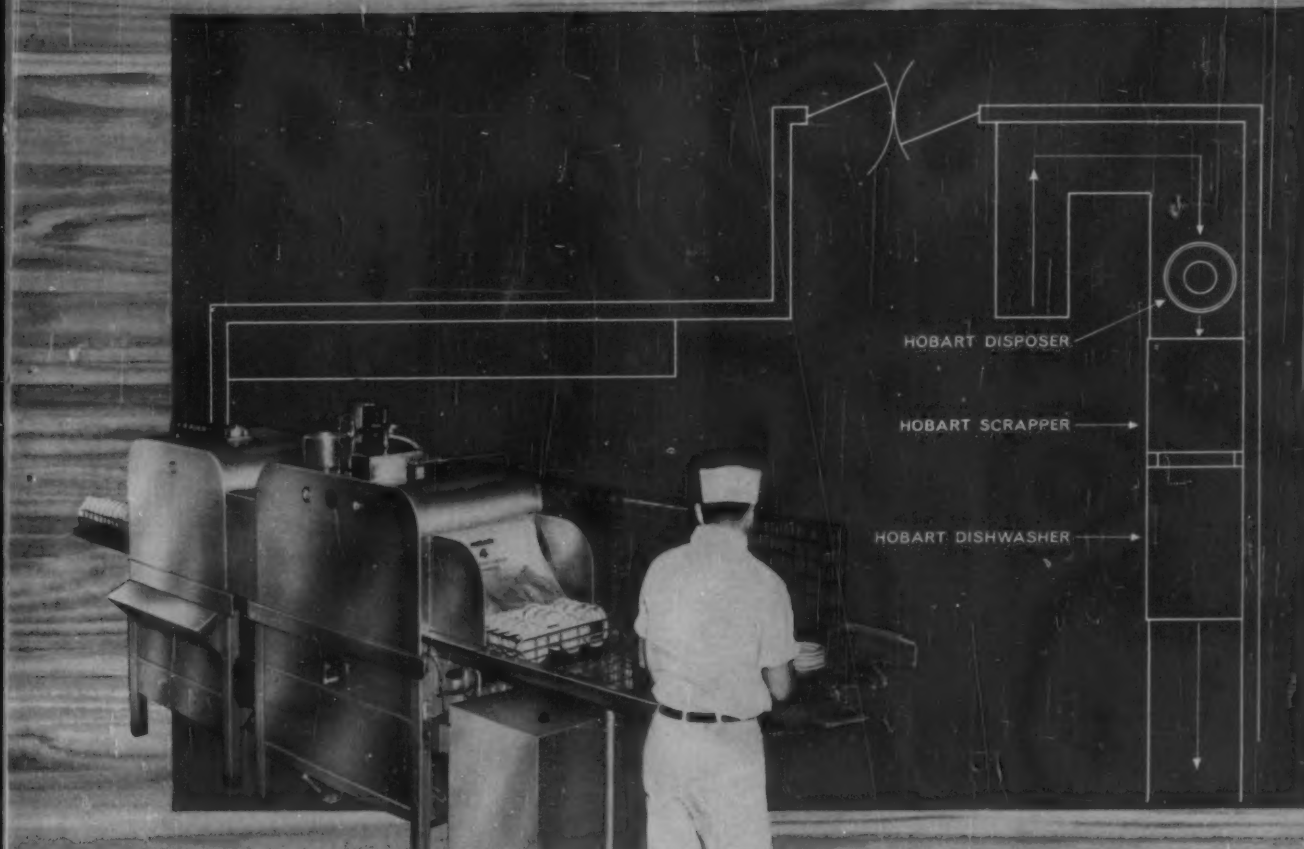
The first old people's project with loans from the Federal government under the National Housing Act was built in 1946. Since then nearly 2750 units in 89 projects have been constructed. In recent years the role of the National Housing Act in providing housing for the aged has become more widely known and nearly half of these projects have been started in the last two years.

Limited-dividend loans are made under Section 16 of the Act to companies prepared to limit their dividends to not more than five per cent of their investment. Most sponsors of these projects, however, are not profit-making but are service clubs and philanthropic organizations. Companies applying for NHA limited-dividend loans are not restricted to providing housing for the aged—they can also build for any families of low income.

Before a loan will be considered the group has to prove that there are conditions of shortage, overcrowding or substandard housing in the district where it intends to build. The amount of the loan is up to 90 per cent of the project's lending value and must be repaid within 50 years. The rate of interest is established by the Government when approving each loan, the current rate being 4½ per cent.

Any person or organization can make a capital grant towards the cost of construction of a limited-dividend project, but in this case the loan may be less than 90 per cent to ensure that the company has some investment of its own in the project.

At present four provinces make grants to projects for the aged. British Columbia provides one third of the cost of construction; Saskatchewan makes 20 per cent grants; Ontario provides half the cost in excess of the CMHC loan with a maximum grant of \$500 a unit; and Manitoba grants up to a maximum of \$500 for



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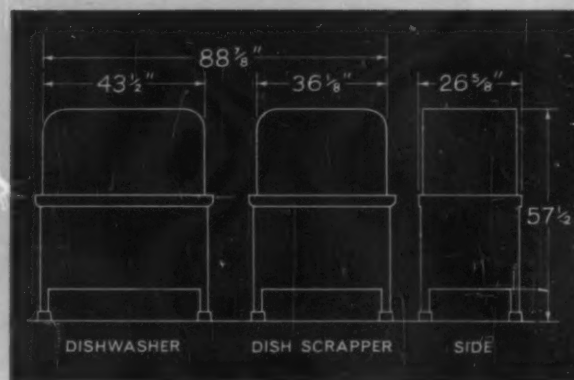
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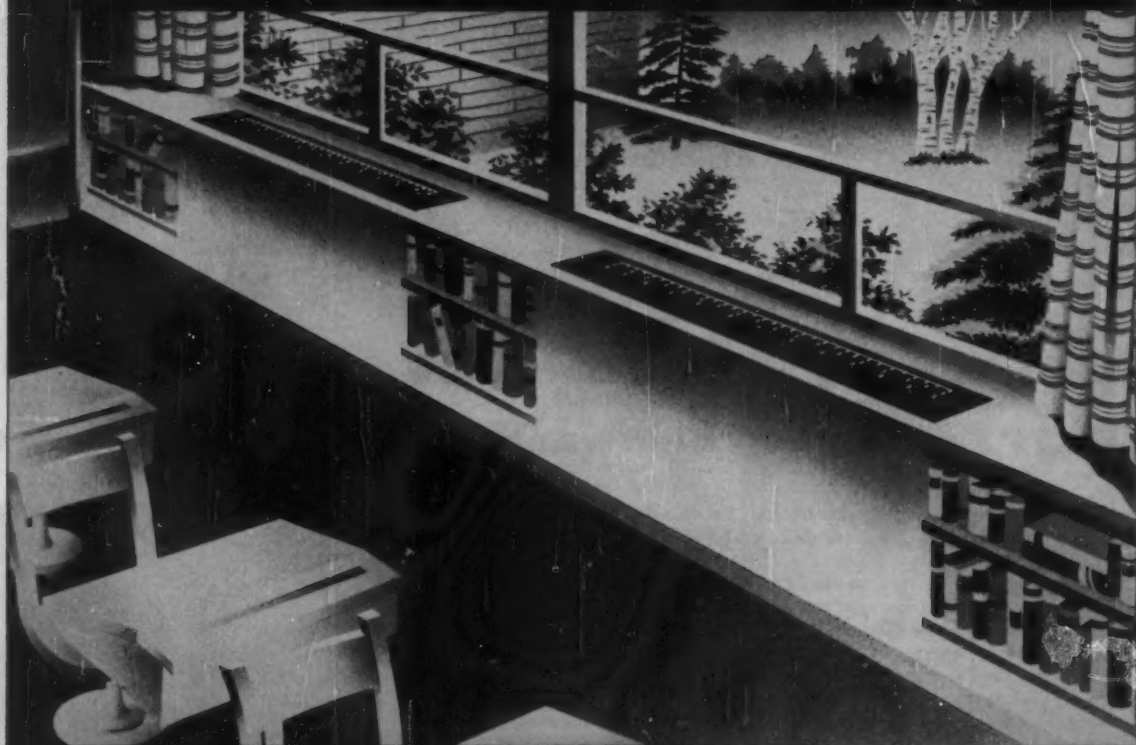
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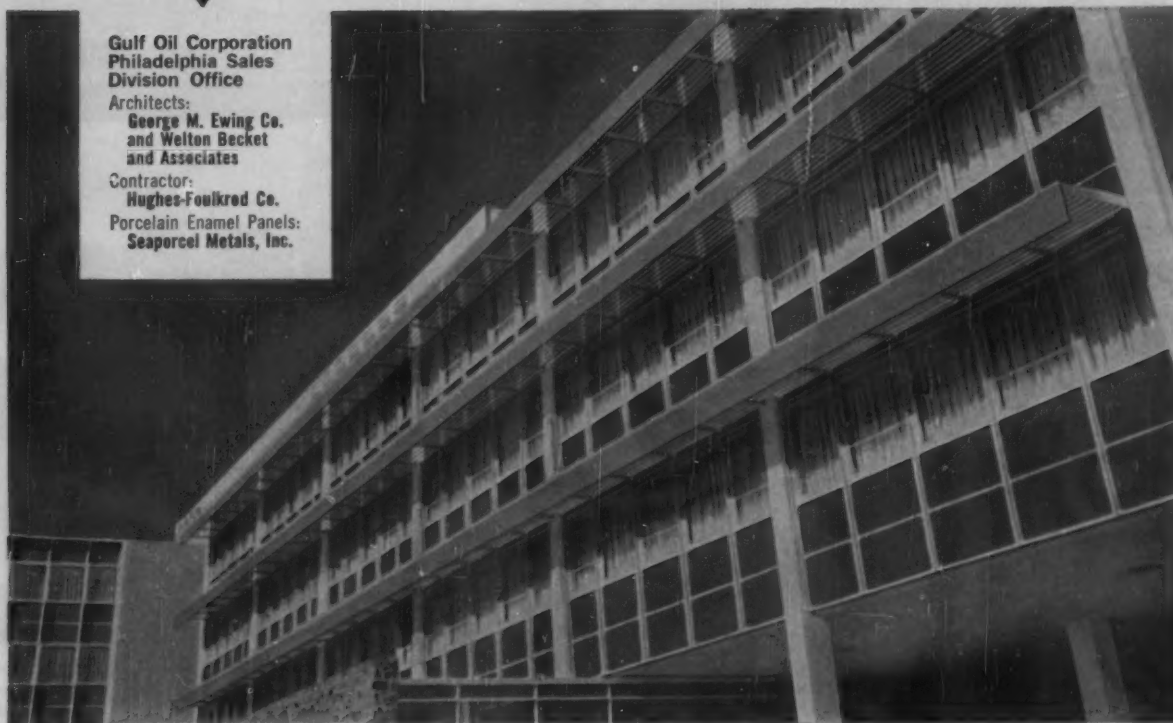
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a two-room apartment and \$350 for a one-room unit. Apart from three projects in Quebec and three in Alberta all the units have been built in provinces offering some form of supplementary financial aid.

No limited-dividend projects for the aged have been built in the Atlantic provinces.

The Federal government also assists in providing accommodation for the aged in low-rental public housing projects. These are built under a partnership agreement between the Federal and provincial



1

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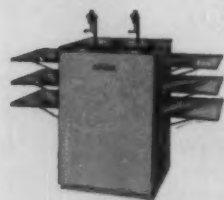
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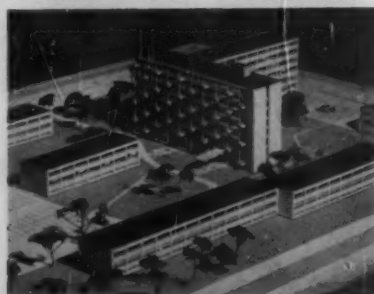


Halsey Taylor fountains, available in wide variety

103



2



3

Three projects for the Municipality of Metropolitan Toronto; Jackson, Ypes and Associates, Architects. 1. "Westacres"—128 suites renting from \$45 to \$53 per month. 2. "Northacres"—128 suites, including 64 bachelor suites and 64 one-bedroom suites; rent ranges from \$45 to \$53 per month. 3. Project for downtown Toronto, to contain 405 suites; estimated cost \$2.5 million

governments. By policy, however, the Federal government does not participate in public housing projects designed solely for the aged, or for any other special group.

Planning Factors Considered

Most authorities agree that apartments for the aged should be built on one floor, with no stairs. Kitchen equipment and storage should be within easy reach and without dependence on hazardous fuels or fixtures. The floors should be nonslippery and there should be a handrail around the bath. Light switches should be near room entrances. The light fixtures themselves should be placed within easy reach so that the old people do not have to climb on chairs to replace bulbs.

Location of the project is also important. It should be within short walking distance of shops, churches, libraries, parks and other places

continued on page 278

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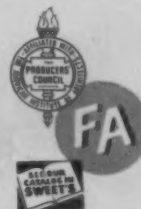
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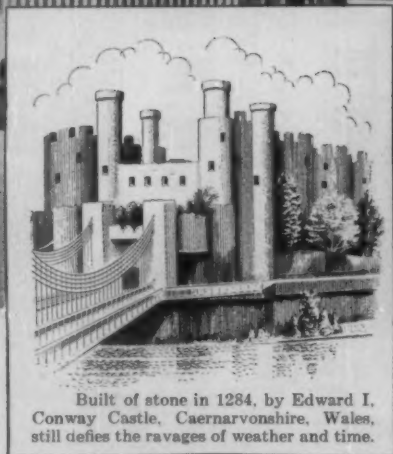


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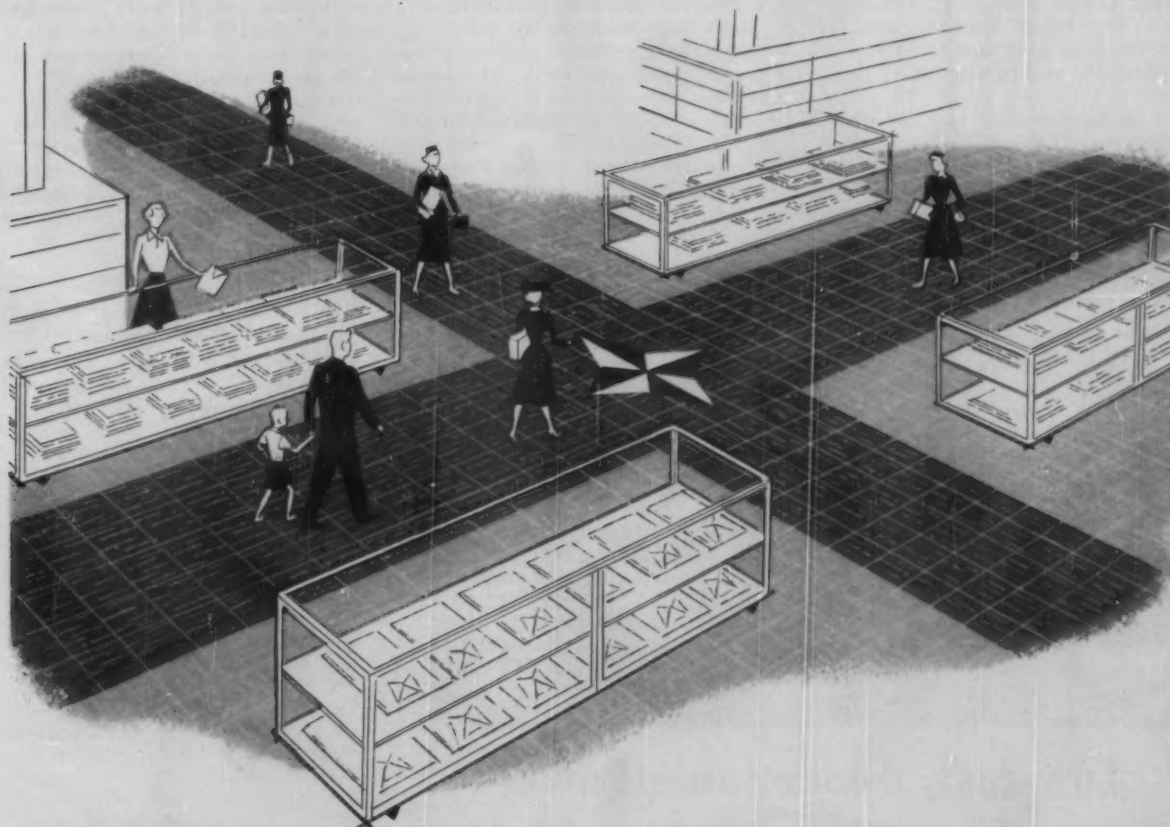
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ARCHITECTURAL RECORD July 1958

55

Air Force Requests \$1 Billion 1959 Construction Program

The Air Force has asked for an authorized construction program of better than \$1 billion for fiscal 1959. Added to the askings of Army and Navy, this would push the military construction program for the current fiscal year to around \$1.7 billion.

A spokesman said the Air Force was prepared to accelerate dates on which operation capability of certain weapons could be achieved.

Most of the authority sought was for new construction projects, only \$18 million being asked to increase the authority voted by Congress in previous years.

Congress was told that \$403 million of the amount asked would go for the construction of new facilities directly connected with increasing striking power for the Strategic Air Command. This work must be done if SAC is to maintain and improve its position of readiness, it was said.

The House Armed Services Com-

mittee, which heard the Air Force plea for added construction authority, also approved construction by the Defense Department of more than 100 armory properties. Total estimated cost of these was placed at \$24,936,101. Money for them already had been appropriated and Senate committee approval, required before construction could begin, was virtually assured. Types of buildings covered in the committee action: National Guard armories, Army Reserve buildings and National Guard non-armory construction.

Clark Proposes Major Boost In Hill-Burton Funds

Senator Joseph S. Clark (D-Pa.), came out in favor of a substantial increase in Federal aid funds for Hill-Burton hospital construction. He aired his views before a Senate Appropriations subcommittee, asking that the funds be boosted from \$120 million to \$210 million, the full authorization.

His arguments pointed strongly toward this type of construction as an employment stimulant. The subcommittee was reminded that Congress adopted a resolution in March calling for an acceleration of public works for which funds already have been made available. An increase in the Hill-Burton fund meets this objective nicely, Senator Clark said. He also found it to be consistent with President Eisenhower's letter to Congress March 12 in which the latter said—"acceleration of planned or needed public improvements can be helpful in prompting increased growth of the economy."

"If there is a consensus on any of the many proposals made to deal with the current recession," Senator Clark stated, "it is that this is the time to speed up the construction of needed and worthy public works of all kinds." Among the most worthy of these he placed the hospital facilities built under the Hill-Burton Act.

More Talk of School Building Aid; Junior College Grants Asked

New pressures were being put on the House Education Committee to approve a school construction aid bill. These came amid many statements made on the subject of assistance in the field of scholarships for mathematics and science training.

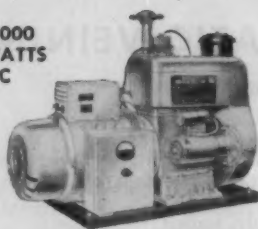
Representative Coffin (R-Me.), in his request for the group's approval of such a program, said the need for school facilities was ten times as great this year as it was in 1957.

continued on page 298



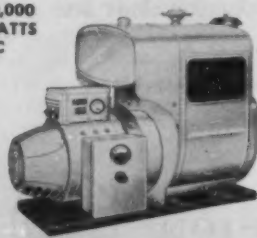
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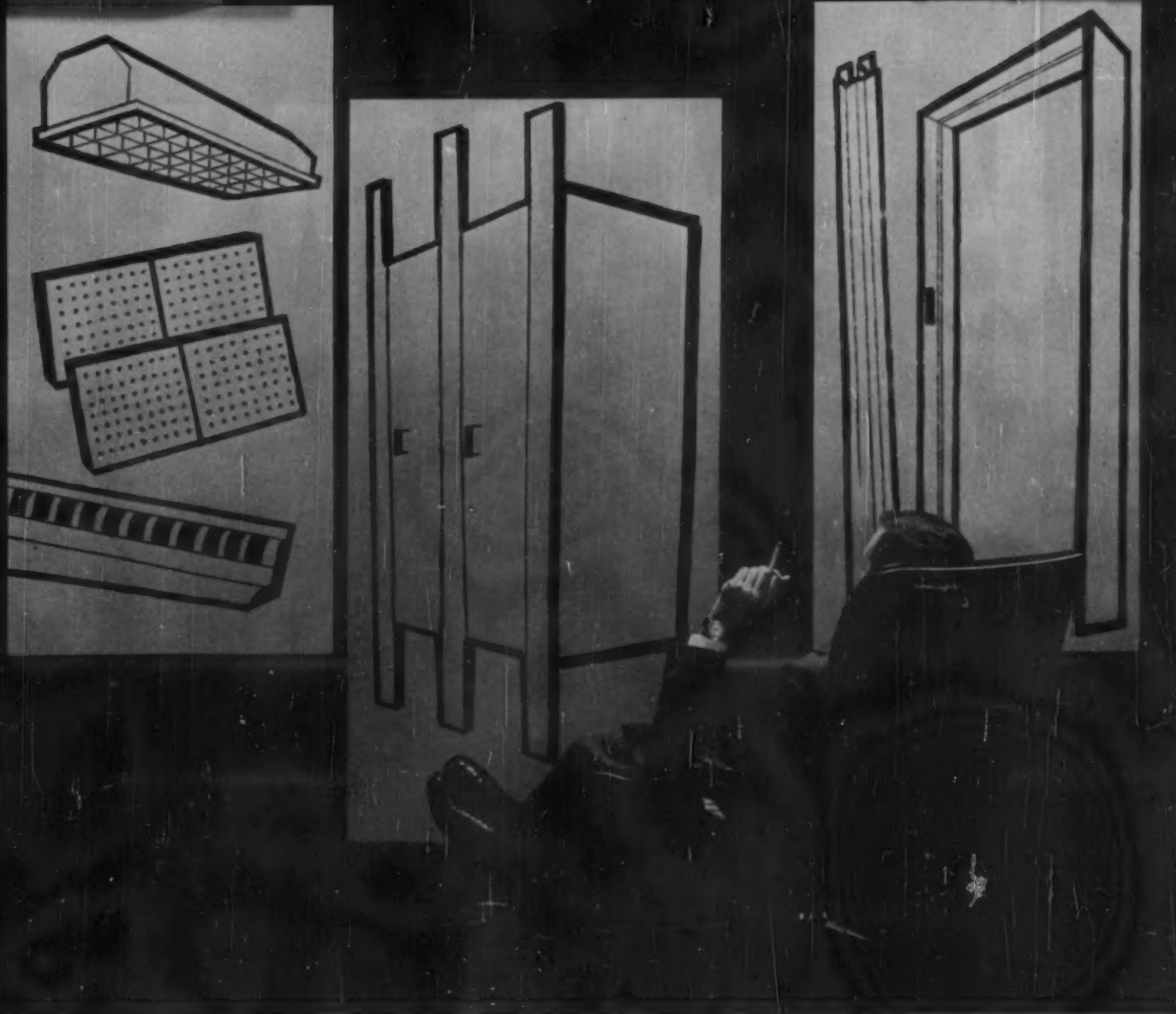


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Architectonic Sculpture

By Herbert L. Smith, Jr., A.I.A.



Linear Construction No. 2 (1953): plastic study of motion within a sphere

Gabo. Harvard University Press (Cambridge, Mass.), 1958. 193 pp., illus. \$15.00.

This handsome volume is the first, and without doubt long overdue, review of Naum Gabo's work in constructions, sculpture, paintings, drawings, and engravings. Gabo is the leading exponent of a movement in modern art known as constructivism.

Gabo's long artistic career, which began in the early 1900's when he helped found the constructivist movement, reached a sort of culmination last fall, with the completion (and attendant publicity) of his monumental sculpture fronting Marcel Breuer's De Bijenkorf department store in Rotterdam, Holland (AR, November, 1957). This book and special exhibitions of Gabo's work this year in Rotterdam, Amsterdam, and London, are at least partially the result of the enormous impact of this sculpture.

Constructivism, as Gabo sees it, belongs to a different concept of art from most of the non-objective theories we are familiar with. True, it is also an abstract art, but one concerned more with growth and form, and in the later years with visual movement and change. It is probably

due to this, and to the materials with which he likes to work—steel, bronze, glass, plastics—that his work carries significant and highly interesting architectural implications.

In one of the essays included in the volume—which consists, fittingly, mainly of photographs—Leslie Martin discusses the relation of Gabo's work to architecture: "It is intended to become not merely an object in space but, like architecture itself, it must define, limit and enclose spaces. . . . The interesting thing about Gabo's work is his capacity to suggest the way in which surfaces can enclose volumes, his power to develop these surfaces, and his intuitive awareness of the forces, the tensions, and the compressions that are at work in his constructions."

Gabo's interest in achieving height and rigidity without mass, and in plastic forms, could well open some new horizons in architectural thinking.

The book contains a very adequate selection of writings on constructivist thinking by Gabo and others,

continued on page 63

Architectures By The Numbers

By Arthur Fisher

This book is a contribution to the study not only of proportion in architecture but of esthetics in general. Mr. Scholfield has forged an interesting statement in support of the objective theory of beauty, which states that "our sense of beauty is not entirely arbitrary and unpredictable, but is aroused by certain real qualities in external objects which we can learn to understand and reproduce."

In essence, the author's theory is this: "The object of proportion is the creation of visible order by the repetition of similar shapes." This process may be accomplished by "the generation of patterns of relationships of mathematical proportion between the linear dimensions of the design. Of these patterns . . . the geometrical progression is typical." Now, certain progressions or series may be more useful than others, because they have additive properties. Thus we are led to realize that discoveries in number theory have had the greatest importance for architects, and that the preoccupation

with the golden section, for example, has stemmed from the subtle mathematical relationships implicit in this device.

Using this objective and mathematical approach, the author interprets the growth of the systems of proportion in a remarkably lucid and cogent way, free from the vagaries of metaphysics. He demonstrates convincingly that all such systems fall into one of three categories, depending on the underlying mathematical pattern (whether appreciated by the originator of the system or not): analytical and commensurable; geometric and incommensurable; and analytical and incommensurable. The last (and most recent) of these systems is the most fruitful and rewarding.

All the apparent contradictions in the welter of conflicting architectural theories are resolved as they are examined in historical perspective. Mr. Scholfield begins with the work of Vitruvius and presents, probably for the first time, a coherent inter-

continued on page 63

The Theory of Proportion in Architecture. By P. H. Scholfield. Cambridge University Press (New York), 1958. 156 pp., illus. \$5.50.



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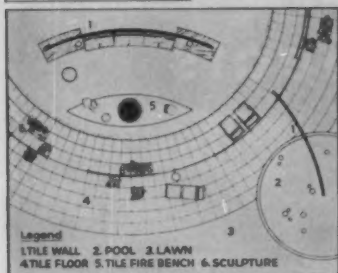
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Required Reading

continued from page 60

Gabo . . .

and includes the "Realistic Manifesto" of 1920, which launched the movement. In addition to over 100 conventional plates (sixteen of them are in color), there is a rather unique section of ten subjects shown in stereoscopic color plates—a special pair of glasses is tucked into the back cover. The reproductions are arranged chronologically and include several early sallies into actual architecture (projects) by Gabo.

Proportion . . .

pretation of this pioneer's baffling terminology. This achievement is, in itself, a singular one. He then examines, in turn, such Renaissance theorists as Alberti, Palladio, and Leonardo; the Greek-Gothic Revivalist movement; and the modern work of Schooling, Hambidge, Le Corbusier, among others.

The book is enhanced by an appendix on the application of various mathematical series, a bibliography, and numerous well-chosen illustrations. It might be of interest to all those concerned with architecture, the visual arts, and esthetics.

Designing For The Theater

The Theatre of Robert Edmond Jones.
Edited by Ralph Pendleton. Wesleyan University Press (Middletown, Conn.), 1958. 196 pp., illus. \$12.50.

Whether architect or set designer, an artist must translate visual and spatial concepts into actual materials. In either case, the achievement is measured by the degree to which a specific purpose is fulfilled and a specific effect created.

Active from 1915 to 1951 (he died in 1954), Robert Edmond Jones brought new grandeur to the American theater; each production was for him an adventure in the fusing of design, lighting, and costumes to accomplish a unified whole. An architect might find the detailed descriptions of his working methods in this book useful, and he would certainly find them interesting and inspiring.

John Mason Brown, Mary Hall Furber, Kenneth Macgowan, Jo Mielziner, Donald Oenslager, Lee Simonson, and Stark Young have written essays on various aspects of Jones' life and work for the book. The editor has compiled a chronology, including all the productions. The most striking feature is the fifty-one handsome plates of set designs.

more books on page 314

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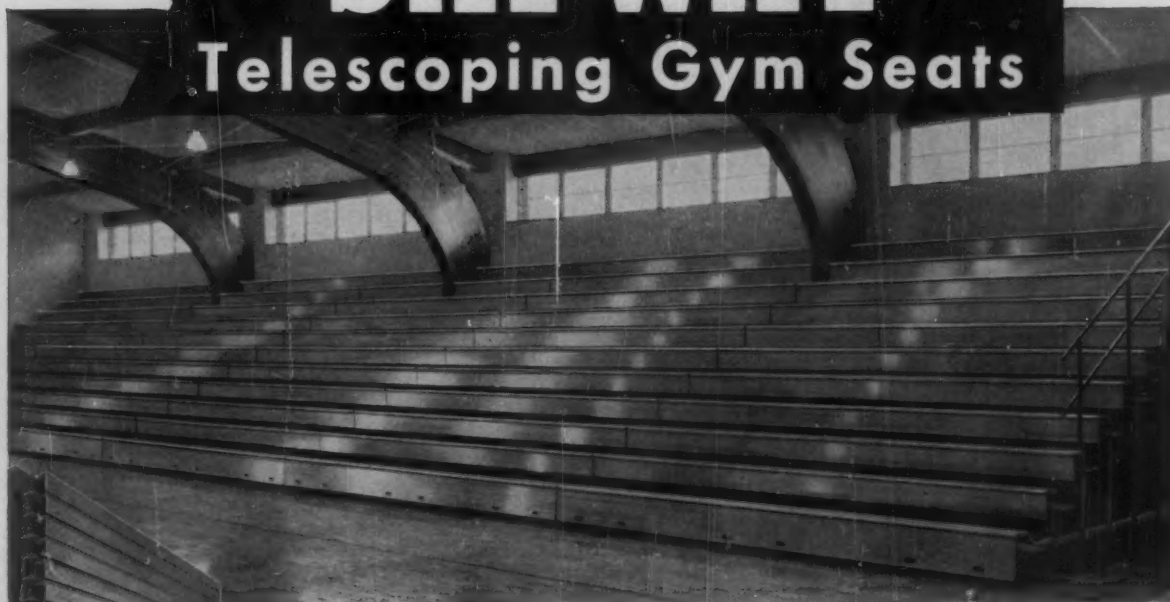


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WESTERN EDITOR

*Elizabeth Kendall Thompson, A.I.A.**2877 Shasta Road, Berkeley 8, California*

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If architects want to influence legislation favorable to their profession they must first "clean house," a California legislator, Assemblyman Sam Geddes recently told a joint meeting of architects and engineers in the San Francisco Bay area. Not only must they clean their own house, he said, but "each must help the other to clean up the industry." Two specific instances which he mentioned as typical of the kind of thing that is "hurting your profession" both involved the re-use of school plans and fees charged in these instances.

"The honesty and integrity of the profession are at stake if you don't clean this up," he charged.

The seriousness of the charge was not lost on the architects who heard it. For it was plain that architecture, like Caesar's wife, must be above suspicion if it is to hope to receive a full measure of public respect.

What the legislator was advising was the essence of good public relations—the foundation without which the building of favorable public reaction is impossible. The house must be clean before company is invited to enter it. If the public is to know about architecture, architecture—the practice thereof—has to be ready to show itself off, in every facet.

Too often, too prevalently, the notion that public relations is publicity has interfered with the sound approach to this much-needed program in the architectural profession. Publicity can never substitute for good public relations, but it can be a tool toward effectuating this goal; no more can a public relations program take the place of right conduct by those for whom it seeks the public favor. The public cannot respect any group whose practice does not bear out its publicized service. Nor is it easy for a legislator to uphold legislation that favors a group whose "house" is unsound and unclean.

No one can do this house-cleaning job for the architectural profession; it must do it itself. If its collective position is to have meaning and validity, it must do the job individually. Reform can't be effected wholesale. It's strictly a do-it-yourself job.

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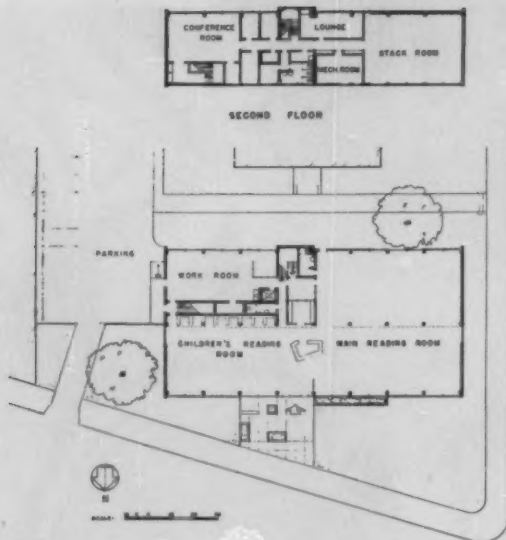
Two Libraries:

The old Carnegie library served in its day to accomplish the miracle of making books available in a central place for all the public to use. These buildings, sturdily built and adequate until populations began to grow rapidly, are gradually being replaced. In the West particularly, construction of new library buildings is providing new counterparts to these early landmarks: open, inviting structures, attractive to children as well as to adults, to readers and students but also to the community for expansion of its cultural activities.

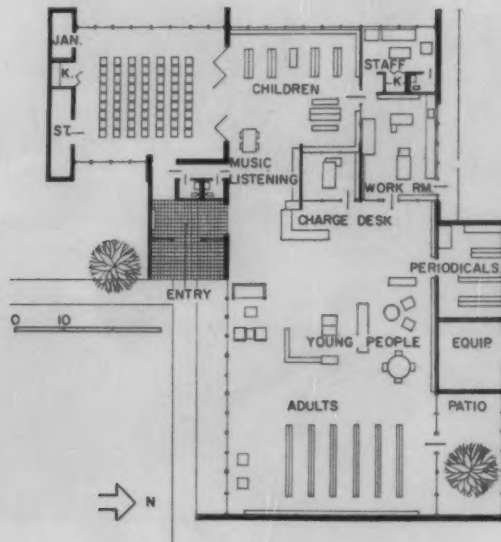
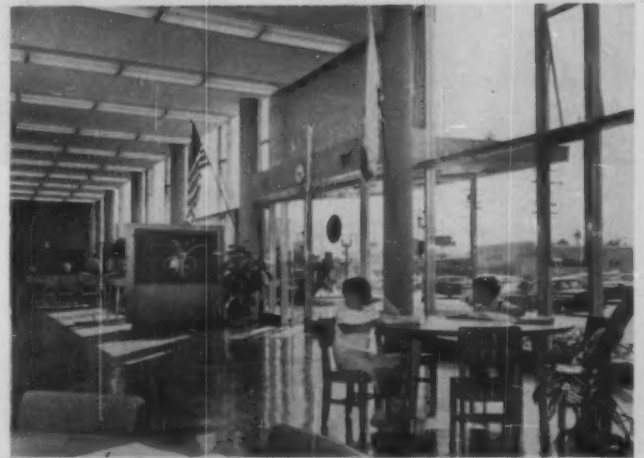
*Public Library
for a Small Town
Artesia
New Mexico*

*James A. Burran, Jr.
Architect*





This branch library serves not only its immediate neighborhood but acts as headquarters for seven branch libraries in an area of approximately 85 sq mi with a population of 200,000. The main reading room and children's room, visible through the glass wall along the street front, are easily accessible to the public. Stacks and service areas are at ground floor level; offices, staff facilities, book storage and conference room are on second floor. Cost of the building was \$255,000



In the small town even more than in the larger one, the library is the center for the community's cultural activity. Artesia's new library was designed to promote this sense of community participation: the meeting room, opening off the children's room (with which it can be combined for additional space when needed), is so located that it can be used independently—for art displays, civic group meetings, picture projection—thus extending the building's hours of usefulness. Design requirements included appropriateness to the residential area in which it is situated and a contemporary solution which would also reflect the tradition of Southwest architecture. Hence the post and lintel construction, and the painted (Mexican orange and blue) grooves on the beams



Stadium Between Two Desert Buttes

*Edward L. Varney
and Associates
Architects and Engineers*

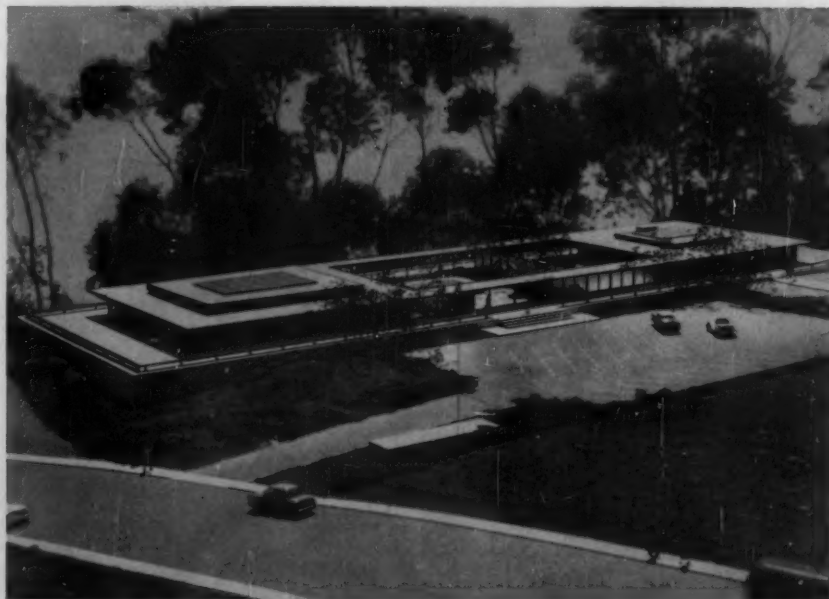


This new stadium for Arizona State College at Tempe is situated in a bowl between two desert buttes near the college campus. Designed by Phoenix architect Edward L. Varney and Associates, the stadium will be 800 ft long, 640 ft wide, with 15,000 seats in 50 rows on each side. Expansion to provide

70,000 seats will be possible at a later date. Parking will be in areas reclaimed from the Salt River bed at the north east of the stadium, with ramps to connect parking areas and stadium, and at the south side. Cost of the stadium, scheduled for completion in time for the fall football season, will be \$800,000.

California Hospitality in a Government Building

*Thornton Ladd
Architect*



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The buildings were designed, the architect says, to “infuse the spirit of California hospitality into the monumental architecture of our government, and to convey the warmth and welcome of a good neighbor without compromising the dignity of a great power.” The site is a dramatic one, overlooking American Falls on one side and Queen Victoria park on the other. John Field Kelsey is associate architect on the project.

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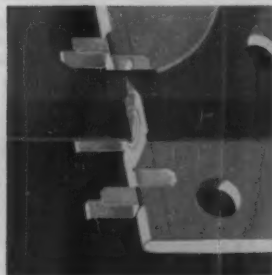
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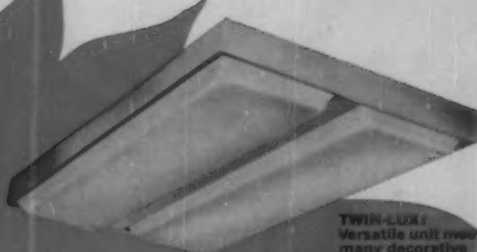
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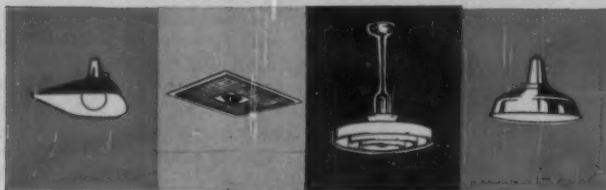


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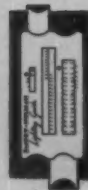


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Cover Boys

On the cover of the June 21 *Saturday Evening Post* was a John Falter drawing of a schoolhouse from which jubilant pupils were escaping for vacation. If the school building looked vaguely familiar to San Francisco Bay architects, that's because it's a local landmark—one of Belvedere's elementary schools. The architect, as far as the *Post* was concerned was Anon., apparently, for it mentioned no names. But the *RECORD* knows, and for the record it was John Lyon Reid and Partners who designed it.

Engineering News-Record for May 29 carried the face of Henry J. Brunnier, San Francisco consulting engineer, on its cover, honoring him on the fiftieth anniversary of the opening of his office.

A Tour of Maybeck's Buildings

It is not permitted to know all things, said the poet Horace; not even all things about one thing. And surely to know all things about one man's work is indeed beyond knowing, at least in one lifetime and with ordinary human perception. But within the limits of human frailty, those who went on the Maybeck Memorial Tour, held late in May in Berkeley, San Francisco and Marin County, had the chance to approximate a knowledge of one architect's work.

The tour covered three areas and took two days; it encompassed houses and clubs, a church—his masterpiece, the Christian Science Church in Berkeley—an office building, an automobile showroom, a gymnasium, a studio and an art center. And the Palace of Fine Arts, opened for that one day, beautiful still in its decay, unique and irreplaceable.

Most of the houses shown on the tour had never been opened to the public before; some were known only to the friends of the owners. One of these was the "bubblestone" roof house in the Kensington section of Berkeley, built in 1928. Its roof (now painted with aluminum paint) still consists of the sacks dipped in "bubblestone," a lightweight concrete mixture which greatly interested Maybeck. Its living room ceiling is of sound wormy cypress, a material not much in demand at the time the house was built and therefore inexpensive. Another, in North Berkeley, boasted a piece of concrete work quite incredible in its intricate form—a tribute to the workmen as well as to Maybeck who devised the means for forming it.

Of the two houses in Marin County, one was delightfully Maybeckian, preserved in its original state. The other, unfortunately, had been completely painted inside, and although many details were definitely Maybeck's, the cream-colored interior—woodwork and all—certainly was not. Outside there were carved beam ends to recall who was the architect.

The tour was jointly sponsored by the Northern California chapter, A.I.A., of which chapter Maybeck had been a member, and the San Francisco Section, Women's Architectural League.

The range of work, the focus of mind and emotion on one man's approach to architecture, the opportunity to experience in a concentration of time the infinite variety and the reiterated principle—what an incomparable occasion! And what a lesson in architecture to go from the small and completely human scale of the houses in which he himself had lived—the sack house, and the house in which he used the charred timbers left from the ruins of his earlier house—to the great and completely monumental scale of the Palace of Fine Arts.

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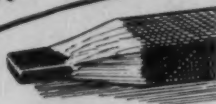
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Denver to Start First Renewal Job

After two and a half years of planning, a redevelopment project is set to move ahead in Denver as a result of the city council's approval of a \$400,000 appropriation as its share of the \$1,200,000 needed for the first stage. The project is the 130-acre Avondale project on the west side of the city between Lakewood Gulch and West 16th Street, Federal Boulevard and Julian Street. Clearing of the land can start in September after the signing of a final contract with the federal government.

Forty acres of the area now contain substandard housing and will have to be cleared; the remaining 90 acres will be rehabilitated. Private developers will be invited to bid on construction of housing for low-income families, some 400 of which will be provided for in the project.

Civic Center Architects Named

Three architectural firms have been appointed to develop plans for projects in Seattle's new civic center. They are Paul Kirk, named to develop a master plan for the site; James J. Chiarelli and B. Marcus Priteca, to convert the civic auditorium into a 3000-seat concert hall; Bassetti and Morse to design improvements for the Ice Arena.

The civic center project has met problems of cost increases in property needed for the center, however, and some changes in plans may become necessary as a result. Instead of the cost of land acquisition amounting to the hoped-for total of \$2,500,000, it will cost an actual \$4,356,461 according to figures from the condemnation proceedings.

Program to Attract Young Architects

"Creativeness in Architecture," this year's theme for the California Council, A.I.A., convention, was chosen to re-emphasize creativeness as an essential quality in architecture and in its practice, according to Loy Chamberlain, chairman of the convention advisory committee.

The program will include sessions on "The Creative Mind," "Materials as Creative Tools," "Structure in Creative Design" and two sessions on "Analysis" and "Synthesis" of design, with three nationally-known architects discussing a specific building project of his own from concept to completion, and an architect of international stature summarizing the conference theme.

A special session, planned especially for the young architect and the student, has been scheduled for the Saturday of the convention in order to make possible as large an attend-

ance as possible. Three young project designers from prize-winning California firms will be the speakers. They are Neill Smith of the office of John Carl Warnecke, San Francisco; Richard Hein of Anshen and Allen, San Francisco; and James Langenheim of Pereira and Luckman, Los Angeles.

The convention will be held October 15-19 in Monterey, Calif., with headquarters at Mark Thomas Inn. All meetings will take place at the Monterey Fairgrounds, an unusually attractive group of buildings set in an oak grove near the Inn. Casa Munras in Monterey and La Playa Hotel in Carmel have also been reserved for convention-goers.

Portland's E-R Center Site Wins

Portland's controversy-ridden Exposition-Recreation center can at last settle down, apparently for good, on its Broadway-Steel Bridge site. The project, victim of delays and arguments ever since it was first proposed, was once again the subject of a referendum in the last elections, when its site, approved by an earlier vote, was questioned.

Proponents of a site at Delta Park, a low-lying but large piece of property on the Columbia River outside Portland's city limits and nearer to Vancouver, Wash. than to the center of Portland, had introduced a measure which would have moved the center's site to Delta Park. The measure was defeated, however, by a 25,000 majority.

Clearing of the Broadway-Steel Bridge site is already under way, with construction scheduled to start shortly. Skidmore, Owings and Merrill are architects; Moffatt, Nichols and Taylor are structural engineers.

Portland Opens Six-Lane Bridge

For the third time in 71 years, Portland has dedicated a bridge across the Willamette at Morrison Street, but the new bridge bears faint resemblance to the first, a wooden structure which replaced the ferry that had been in use since 1848.

The new Morrison Street bridge is a six-lane, \$12,500,000 steel and concrete structure with a double-leaf drawbridge that can be opened and closed in three minutes. It will handle 64,000 cars daily. Decks of the two center bascule spans are of steel grating; decks of the flanking spans are of prestressed light-weight reinforced concrete. Since the new bridge is higher than the old, its drawbridge will not have to be opened as often.

The old Morrison Street bridge, built in 1905 when Portland had only 242 automobiles, still standing but barricaded, will be torn down soon.

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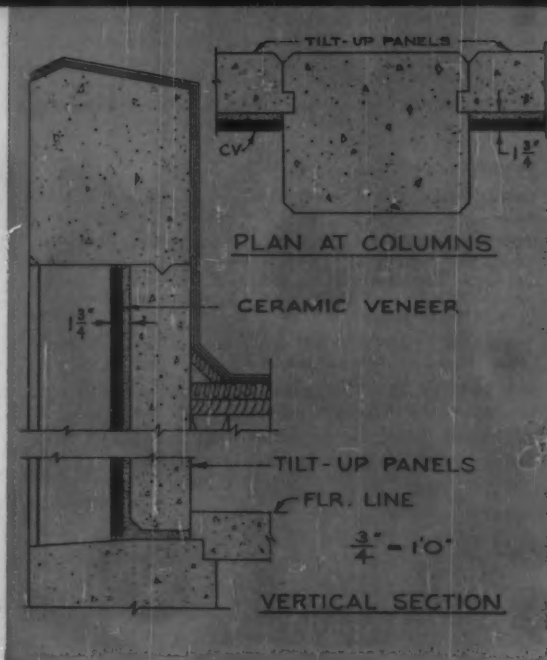
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Calendar of Western Events

- JULY 7-20: A.I.A.-Sunset Awards, exhibition of photographs of winners, Long Beach Museum of Art, 2300 East Ocean Boulevard, Long Beach.
- JULY 7: Nuclear Engineering Survey, week-long course for executives and administrators, University of California, Berkeley
- JULY 18-AUGUST 17: Korean Art Treasures, Seattle Art Museum, Seattle, Wash.
- THROUGH JULY 31: Structural Steel in Architecture, exhibition of photographs, The Museum of Science and History, 2720 Lake Washington Boulevard, Seattle
- SEPTEMBER 25-27: Seventh annual conference, "Living with the Sun," Western Mountain Region, A.I.A., Continental-Denver Hotel, Denver
- OCTOBER 2-4: Annual convention, Structural Engineers Association of California, Yosemite National Park, Calif.
- OCTOBER 9-12: Annual conference, Northwest Region, A.I.A., Harrison Hot Springs, B. C.
- OCTOBER 15-17: National Resources council, Energy Resources conference, Brown Palace West, Denver
- OCTOBER 15-19: Convention, "Creativeness in Architecture," California Council, A.I.A., Mark Thomas Inn and Fairgrounds, Monterey, Calif. In conjunction: regional council, California-Hawaii-Nevada region, A.I.A.
- OCTOBER 16-19: Annual convention, California Council of Landscape Architects, El Mirador, Palm Springs, Calif.

WESTERN SECTION

Index To Advertising

Manufacturers' Pre-Filed Catalogs of the firms listed below are available in the 1958 Sweet's Catalog Files as follows:

a Architectural File (green)

ic Industrial Construction File (blue)

lc Light Construction File (yellow)

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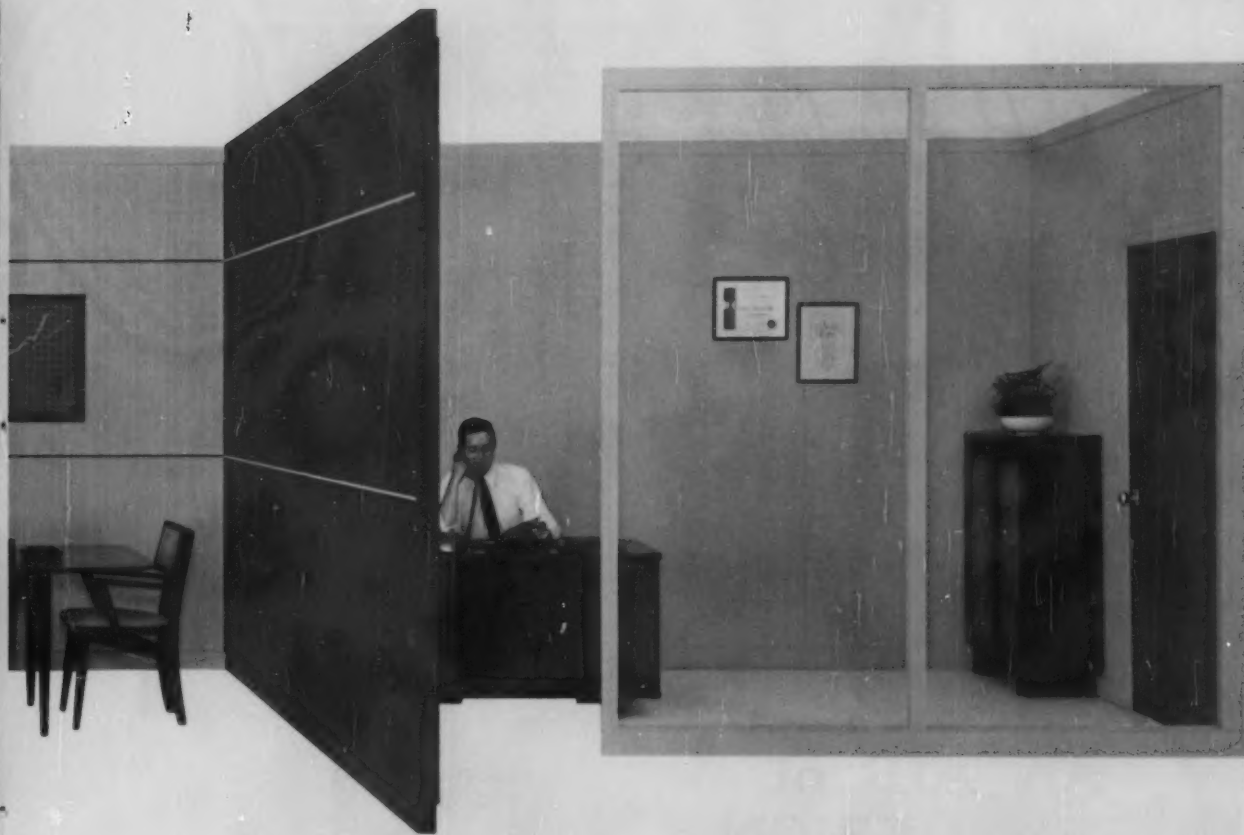
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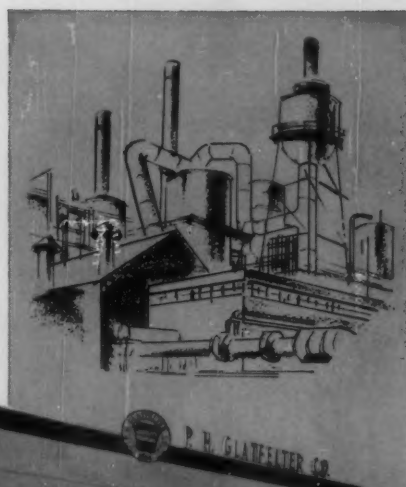


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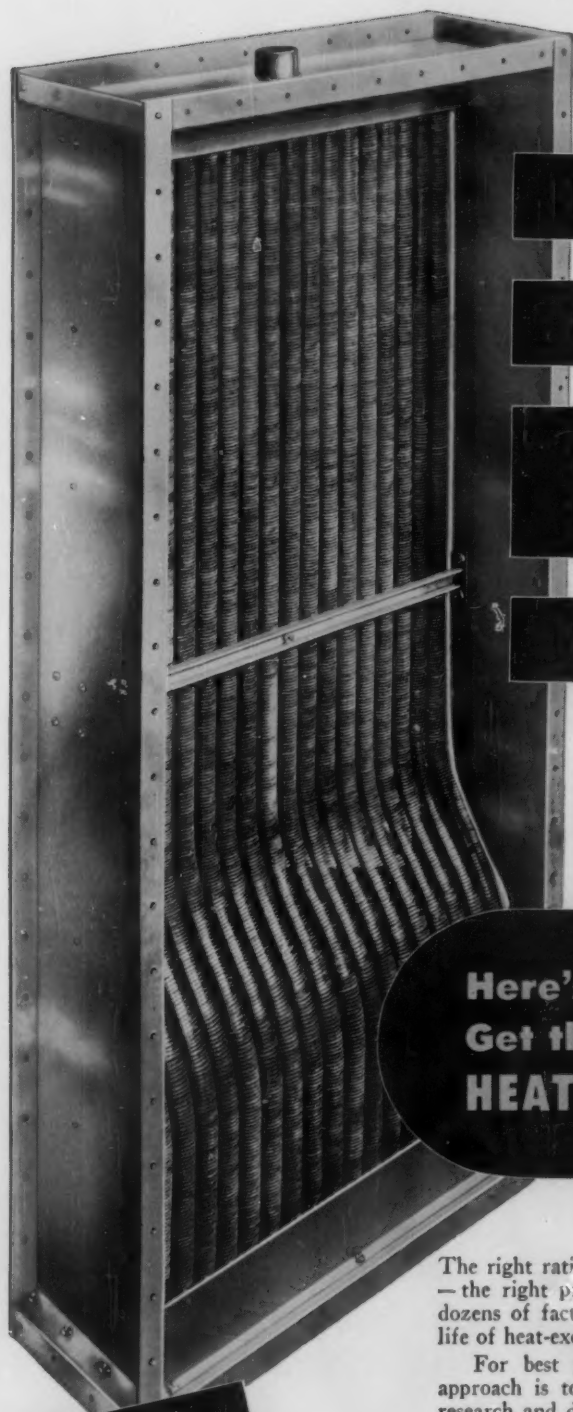
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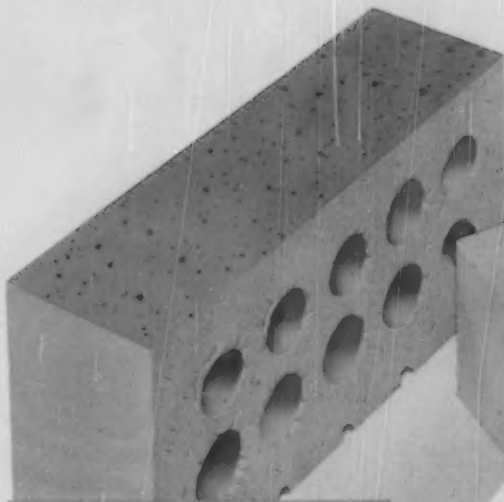
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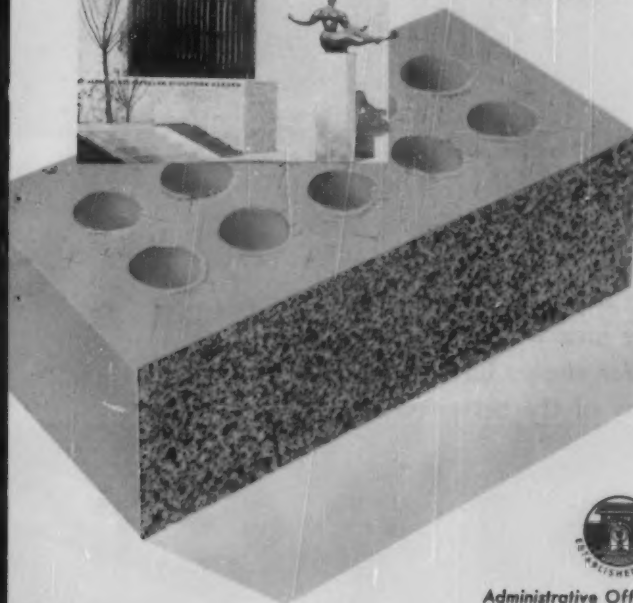
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of her discomforts. Rooms stay cooler, despite summer sun; rooms stay warmer despite winter wind; rooms stay peaceful and quiet, despite the river of cars roaring by on Kingshighway.

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Andrew Signorelli, M. D., Founder and Medical Director of Faith Hospital Association.

But let's talk to Founder and Medical Director Dr. Andrew Signorelli, many of whose theories are expressed in this hospital:

“People always feel better in bright, cheerful surroundings . . . patients, particularly. So we've provided warm, pleasant, happier colors. No one likes to feel shut-in, so through solar planning we've brought in lots of sunshine and opened up our rooms to the view.

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MR. FRANK CAVATAIO
Assistant Superintendent

"Notice how bright and airy our hallways are. Each end of the hall is like a sunroom. Ambulatory patients like to sit and read near that big window wall—or just enjoy the scenery.

"And in here is one of our recovery rooms. They're isolated from the rest of the rooms. That's so post-operative cases can have special nursing care without disturbing or distressing the other patients. That special window in the partition lets light through, and the nurses can see the patients on the other side.

"Now if you'll come upstairs, I'd like to show you our penthouse.

"This lounge is an island of seclusion where staff members can relax with a book, watch TV, or socialize when off duty. Beyond those double-glazed windows is a sun deck.

"These sleeping quarters, off the lounge, are for resident doctors. You might think it would get cold up here in winter, but it doesn't. You don't feel drafts—thanks to the double-glazing. I slept up here during one of our worst blizzards and was perfectly comfortable.

"Let's go back downstairs now and Miss Heinemann can take over from there."

Ambulatory patients enjoy this daylighted, end-of-hall, sunroom.



Resident doctors relax in daylighted penthouse lounge. Typical residents' quarters shown below. All windows are glazed with L·O·F Thermopane for comfort and operating economy.



MISS MARILYN HEINEMANN
Director of Nurses

"This hospital is wonderful to work in. I love the soft pastel colors. And the equipment is the most modern I have ever had the pleasure of using . . . such things as beds that lower to the floor electrically, make it easier to work with ambulatory patients. They can get in and out of bed easily (and no step stools to trip over).

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"Patients tell me they like it here. And we find that the bright, cheerful atmosphere and the laborsaving equipment are a big help in recruiting nurses. Once they see the hospital they always want to work in such cheerful surroundings."

We then talked to the chief engineer, John Treacy.





MR. JOHN TREACY,
Chief Engineer

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"This hospital is air-conditioned with hot water in winter and cold water in summer—individually controlled, room by room. The *Thermopane* windows are a great help. In winter, for instance, they let in the solar heat . . . thermostats in rooms on the south side shut off one-third

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THERMOPANE® For maximum comfort and for heating and air-conditioning economy use *Thermopane* insulating glass in windows. Heat loss is cut almost in half compared to single glazing. Drafts near windows are reduced. Outside noises are muffled. *Thermopane* is available in two new improved types: *Thermopane* with metal-to-glass *Bondermetic Seal®* and enclosed in an edge-protecting aluminum frame; and *GlasSeal® Thermopane*, an all-glass insulating unit that is ideal for both wood and metal sash.

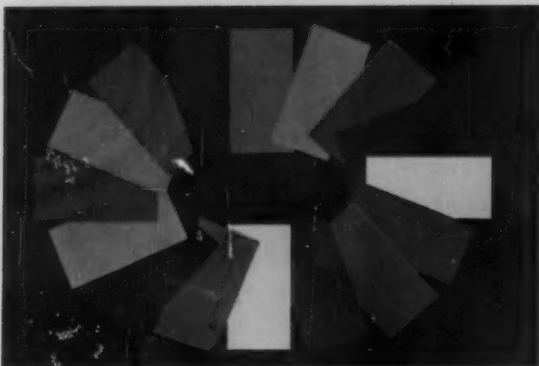


PARALLEL-O-PLATE® To keep distorted reflections from spoiling the appearance of your building, use *Parallel-O-Plate* Glass in the windows. It is twin ground for more freedom from distortion. The glass in the two demonstration windows shown here is backed with black composition board to simulate the mirror effect of windows in a building. In the window at the left, glazed with *Parallel-O-Plate*, the reflection is mirror-perfect. In the other, glazed with sheet glass, note the distorted reflection.



HEAT ABSORBING PLATE For the comfort of those who must work near windows . . . for reducing the initial cost of air-conditioning equipment and its operating cost . . . L·O·F makes two kinds of 1/4"-thick polished plate glass: Heat Absorbing and *Parallel-O-Grey®*. L·O·F Heat Absorbing Plate Glass has a pleasing blue-green color. *Parallel-O-Grey* has a neutral grey tone that does not change the color of objects seen through it. Both offer relief from sun glare, *Parallel-O-Grey* to a greater degree. Comparison of solar heat transmission is as follows:

1/4" REGULAR PLATE GLASS	79.9%
1/4" HEAT ABSORBING PLATE.	46.3%
1/4" PARALLEL-O-GREY	45%



VITROLUX® Used instead of masonry as an exterior facing material, also for interior partitions. Rich color, fused to the back of this clear, heat-strengthened plate glass, adds youthful beauty and cheerful character to your school. Natural resistance to weathering, crazing and checking. Standard maximum size of *Vitrolux* panels is 48" x 84". Special orders up to 60" x 84". Thickness: 1/4" plus 1/16" minus 1/32". Sixteen standard colors plus black and white. Also in non-standard colors subject to manufacturing limitations.



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Owners:
Edmund J. Flynn Co.
Architect:
Dixon & Weppner
General Contractor:
Hegeman-Harris Co., Inc.
Painting Contractor:
John H. Davis Co.
P&L Products Used:
New Lyt-all Flowing Flat,
Vitalite Enamel, Lyt-all
Double Duty Primer,
"61" Floor Varnish,
"38" Pale Trim Varnish,
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Construction Cost Indexes

Presented by Clyde Shute, Director of Statistical Policy, Construction News Div., F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc. Inc.

Labor and Materials: U.S. average 1926-1929=100

NEW YORK

ATLANTA

PERIOD	RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.		PERIOD	RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.	
	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel		Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6	1930	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	1935	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	1939	86.3	83.1	95.1	97.4	94.7
1946	181.8	182.4	177.2	179.0	174.8	1946	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	1947	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	1948	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.6	240.0	1949	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	1950	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	265.2	262.2	1951	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	274.9	271.8	1952	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	1953	223.0	224.6	221.3	221.8	223.0
1954	285.0	278.2	293.0	300.6	295.4	1954	219.6	219.1	233.5	225.2	225.4
1955	293.1	286.0	300.0	308.3	302.4	1955	225.3	225.1	229.0	231.5	231.8
1956	310.8	302.2	320.1	328.6	324.5	1956	237.2	235.7	241.7	244.4	246.4
1957	318.5	308.3	333.1	345.2	339.8	1957	241.2	239.0	248.7	252.1	254.7
Feb. 1958	320.9	309.3	339.4	353.3	348.1	Feb. 1958	242.6	238.9	253.8	259.2	260.0
Mar. 1958	320.1	308.5	338.4	352.5	347.3	Mar. 1958	241.6	237.9	252.5	258.2	259.0
Apr. 1958	319.5	307.9	337.6	351.9	346.7	Apr. 1958	241.2	237.5	252.0	257.8	258.6
% increase over 1939						% increase over 1939					
Apr. 1958	158.7	151.5	158.3	163.8	166.5	Apr. 1958	179.5	185.8	165.0	164.7	173.1

ST. LOUIS

SAN FRANCISCO

PERIOD	RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.		PERIOD	RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.	
	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel		Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel
1930	108.9	108.3	112.4	115.3	111.3	1930	90.8	86.8	100.6	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	1935	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	1939	105.6	99.3	117.4	121.9	116.5
1946	167.1	167.4	159.1	161.1	158.1	1946	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	1947	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	1948	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	1949	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	1950	227.0	223.1	222.4	224.5	222.6
1951	252.0	248.3	238.5	240.9	239.0	1951	245.2	240.4	239.6	243.1	243.1
1952	259.1	253.2	249.7	255.0	249.6	1952	250.2	245.0	245.6	248.7	249.6
1953	263.4	256.4	259.0	267.0	259.2	1953	255.2	257.2	256.6	261.0	259.7
1954	266.6	260.2	263.7	273.3	266.2	1954	257.4	249.2	264.1	272.5	267.2
1955	273.3	266.5	272.2	281.3	276.5	1955	268.0	259.0	275.0	284.4	279.6
1956	288.7	280.3	287.9	299.2	293.3	1956	279.0	270.0	288.9	298.6	295.8
1957	292.0	283.4	295.2	307.1	302.9	1957	286.3	274.4	302.9	315.2	310.7
Feb. 1958	293.7	285.0	300.5	312.8	309.0	Feb. 1958	287.3	272.8	308.0	322.1	316.8
Mar. 1958	293.3	284.4	300.3	313.8	308.8	Mar. 1958	286.3	271.8	306.7	321.1	315.8
Apr. 1958	296.6	287.3	304.9	319.0	314.0	Apr. 1958	285.7	271.2	305.9	320.5	315.2
% increase over 1939						% increase over 1939					
Apr. 1958	169.1	168.5	156.9	166.3	163.9	Apr. 1958	170.5	173.1	160.6	162.9	170.5

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:
 index for city A = 110
 index for city B = 95
 (both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

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Strong, lightweight and nailable, Stran-Steel framing saved time, labor, and materials in this 138-unit multi-floor motel.



Towne House Motel, Rochester, N.Y. Michael J. DeAngelis, Architect; Donn DeAngelis, Designer

Dept. 23-33



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READY FOR THE PEAK OF THE '58 TRAVEL SEASON...

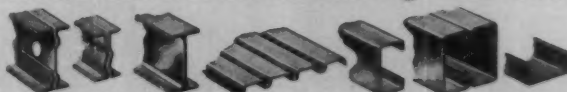
Motel Earnings Start 30 Days Sooner; Stran-Steel System Reduces Fabrication, Erection Time

A coordinated lightweight framing system that's nailable like wood, but has the strength and fire-safety of steel, speeded construction and reduced cost of the Towne House Motel in Rochester, New York. Stran-Steel components were available for construction on the very day the job was let. Much of it was fabricated on site while the footings were poured! As a result, this 138-unit motel was completed a full month earlier. Owner will enjoy an extra month of peak-season income.

Besides the savings in erection time and erection cost, Stran-Steel framing (as opposed to conventional bar-joist systems) reduced material cost by saving 8 to 10 inches in height because joists fit between flanges of wide flange beams.

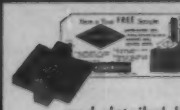
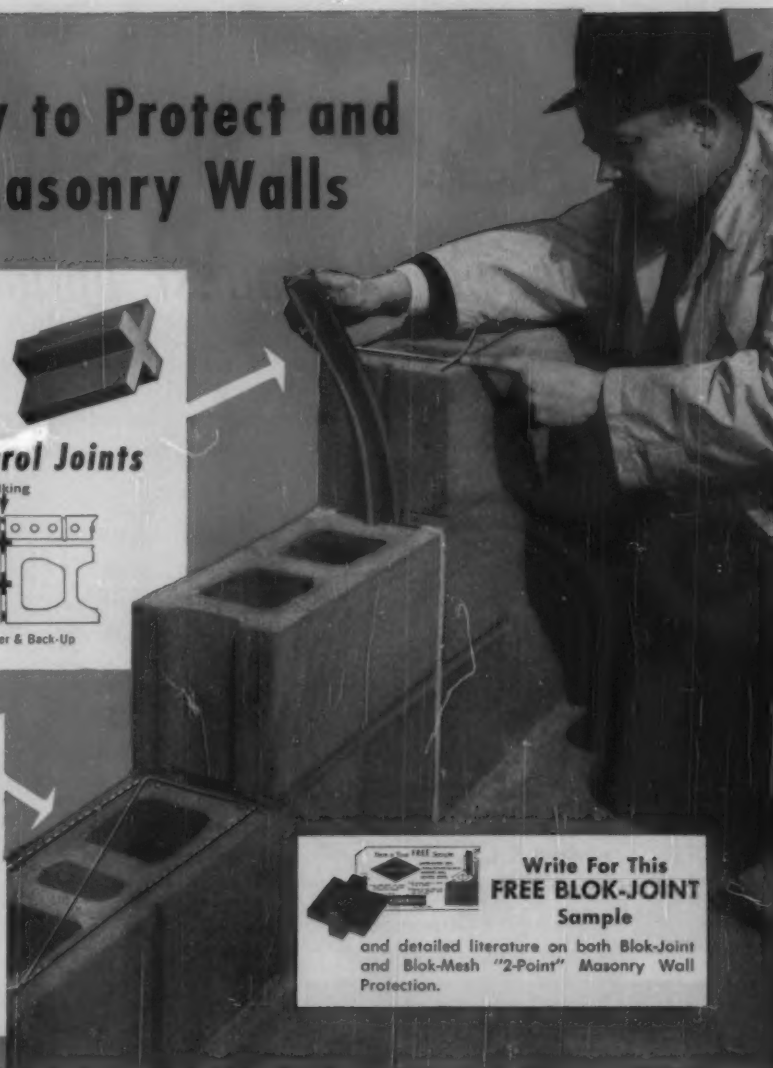
Time-saving, cost-saving Stran-Steel framing offers freedom of design, too. Collateral materials are nailed directly to the steel. Send for catalog or contact your Stran-Steel Architectural Products dealers, listed in the Yellow Pages under *Steel*. Stran-Steel Structural Systems catalog can be found in Sweet's Catalog—index 2C/Str.

Stran-Steel Architectural Products Mean Construction Savings For You



JOISTS and STUDS BEAMS ROOF DECK C-SECTIONS COLUMNS CHANNELS

The New Way to Protect and Strengthen Masonry Walls



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FREE BLOK-JOINT
Sample

and detailed literature on both Blok-Joint and Blok-Mesh "2-Point" Masonry Wall Protection.

BLOK-JOINT Permits Contraction AND Expansion In Control Joints **BLOK-MESH** Reinforcing Has Deep Swedges For Better Mortar Bond

Today's accepted method of building masonry walls includes reinforcing and control joints. Control joints relieve stresses and strains and reinforcing adds strength and resistance to cracking. Use both to provide maximum strength and protection.

BLOK-JOINT is a cross shaped rubber extrusion for making fast, effective control joints in masonry walls. It is used with ordinary metal sash blocks. No special blocks or building paper and mortar fill is needed. Blok-Joint forms a secure interlock for lateral stability—allows both contraction and expansion. It can be used in single walls, block walls faced with other masonry, cavity walls and at pilasters or columns. Molded of

"100-year life" rubber, Blok-Joint meets ASTM and Federal specifications.

BLOK-MESH is the masonry reinforcing with the exclusive deep swedged deforming. The well-defined, squared notches give more gripability with the mortar than conventional reinforcing with superficial nicks or burrs. Blok-Mesh provides effective dovetailing—yet requires no more area in the joint than other types.

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CARTER-WATERS

Blok-Joint and Blok-Mesh are products of The Carter-Waters Corp., 2440 Pennway, Dept. AR Kansas City 8, Missouri

Available in the U. S. through Concrete Block Manufacturers and Building Material Dealers.

Blok-Joint is distributed in the Canadian Provinces of Alberta, Saskatchewan and British Columbia by CONSOLIDATED CONCRETE INDUSTRIES, Ltd., 9th Ave. & 24th St. East, Calgary, Alberta, Canada.

Marlo Comfort *for the world's tallest building*

Under an air conditioning program inaugurated in 1956, a comfortable working atmosphere is being provided for 25,000 tenants of New York's fabulous Empire State Building.

In the latest phase of the 5250-ton cooling job, Marlo central station units are being installed. The ceiling type units, with various capacities, are being installed in suspended-acoustic ceilings for concealed comfort conditioning.

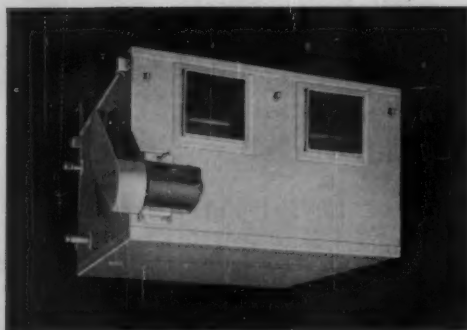
The building is owned by the Empire State Building Corporation. Consulting Engineer for the Marlo units was The Firm of Edward E. Ashley, and among air conditioning contractors are: Kennedy-Scheidel & Young

Riggs Distler & Co., Inc.

Almirall & Co., Inc.

Wolff & Munier, Inc.

Thermodyne Corporation
all of New York City



One of the 120 Marlo central station air conditioning units installed in the Empire State Building. Units will be concealed by suspended ceilings.



MARLO coil co.

SAINT LOUIS 11, MISSOURI

Quality Air Conditioning and Heat Transfer Equipment Since 1925



THIS WATER CLOSET does not disturb your peace of mind

The famous Case "kitten quiet" time tested Non-Overflow One-Piece* water closet with the whispering flush ... PRODUCED IN 48 DECORATOR COLORS AND SPARKLING BLACK AND WHITE. Case manufactures colored fixtures which correspond in color to the colored fixtures produced by leading complete-line manufacturers.

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three progressive select MUELLER BRASS CO. *Streamline*[®] copper tube and fittings for three magnificent new buildings

There are many good reasons why leading architects and builders everywhere are specifying STREAMLINE copper tube and solder-type fittings for modern construction piping. They know that an all-copper plumbing system gives a lifetime of dependable service. Valuable floor space is increased because copper is compact and requires less room to install. Copper tube and solder-type fittings are lighter in weight, easier, quicker to assemble and solder, which lowers plumbing costs. The smooth interior bore is rust, scale and corrosion free . . . which permits the clean, unrestricted flow of liquids with minimum friction-loss. This actually reduces the work-load on circulating pumps, and often allows the use of smaller capacity units. You, too, can take advantage of all of these desirable features at no extra cost . . . by specifying the best . . . copper tube and fittings that bear the tradename STREAMLINE.



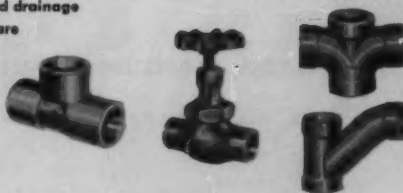
25 YEARS OLD
and still like new!

The giant new Milwaukee County General Hospital was designed by Schmidt, Garden and Erikson, architects, Chicago, in association with Brust and Brust of Milwaukee. Mueller Brass Co.'s STREAMLINE copper tube and fittings for all plumbing and heating were installed by Wenzel and Henoch Company, Milwaukee.

25 years ago, copper tube and fittings were installed in the Civic Auditorium in St. Louis, Missouri. In January, 1958, a section was removed from the line for inspection and found to be still like new! . . . Positive proof of the durability of copper.



A complete line of tubing, valves, supply and drainage fittings for plumbing and heating are available from Mueller Brass Co.



architects...



STREAMLINE tube and fittings were used throughout the new St. Francis Hospital in Milwaukee, Wisconsin, for all supply, waste and vent piping. Francis S. Gurda A.I.A. was the architect and plumbing was installed by Joseph Wittig Company.

Architects Grellinger and Rose of Milwaukee designed the Dominican High School, one of the newest schools in Whitefish Bay, Wisconsin. STREAMLINE copper tube and fittings were installed in this building by Joseph Wittig Company.

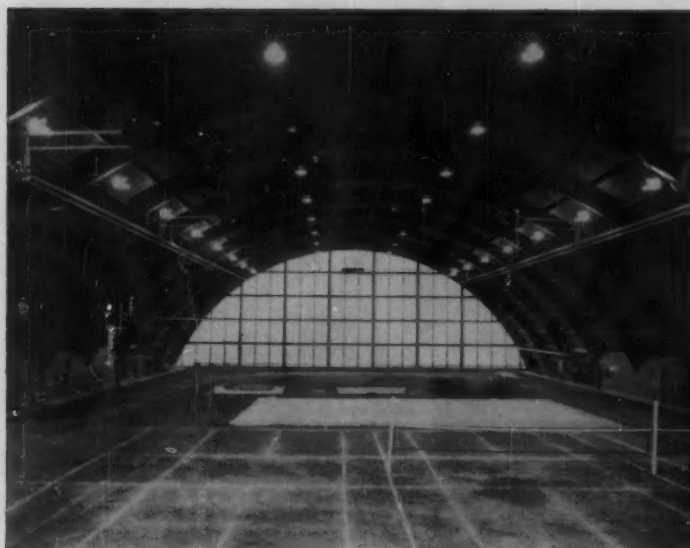


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A vital
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for
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versatile —
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Wolmanized
PRESSURE-TREATED LUMBER

Soaring arches give span without obstruction—a feeling of space without weight—in the new Bloom Fieldhouse. And plenty of room, too, for track and field events, football drills and infield baseball practice! All because the architect-engineers chose glulam timber arches and decked them with 96,534 FBM of 2" x 6" —12' C/M Wolmanized® pressure-treated lumber.

In all types of buildings, Wolmanized pressure-treated lumber assures permanent construction, free from deterioration even when it is exposed to severe conditions favorable to insect and decay attack.

If you want to know more about this versatile, permanent building material, send for illustrated booklet of application suggestions.

Fresh air heating and ventilating for classrooms...for as little as \$1.03 per square foot!



New Lennox Comfort Curtain system automatically draws in fresh air from outside...warms, cleans, circulates air...provides tons of needed cooling without the cost of refrigeration!

Across the country, the Comfort Curtain system is drastically reducing the cost of school heating and ventilating. Costs per square foot of \$1.03 in Indiana, \$1.15 in Montana, \$1.12 in South Dakota are typical. One job went in for *just 65¢ per square foot*, in Potosi, Missouri!

These exceptional savings are the result of a new approach to classroom heating and ventilating, provided by the Lennox Comfort Curtain system. This new system applies to school-rooms the sound, tested principles of warm air heating, thus eliminating the cost of pipes, boilers, towering chimneys and inflexible heating plants.

And most important, the Lennox Comfort Curtain system actually does a *far better* job than costlier systems used previously. It provides a full, even flow of air throughout its entire length along the exposed classroom wall. It is amazingly quiet. And it holds room temperatures to a variance of six-tenths of one degree, circulates air continuously for perfect distribution, introduces a continuous supply of fresh air during the daytime heating cycle, and provides *tons* of needed cooling without the cost of refrigeration.

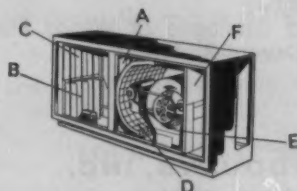
Extensive surveys show that on almost every day when the temperature is above freezing, the classroom no longer requires heat, shortly after pupils assemble. True, at 33° the

average classroom needs about 20,000 Btuh. But 30 pupils will generate about 12,000 Btuh, lighting will add another 8,000 to 10,000 Btuh, and the sun load can account for as much as 15,000 Btuh. Since the amount of heat being generated exceeds the classroom heating requirement, it becomes necessary to *cool* the classroom to maintain a healthful, comfortable temperature. The Lennox Comfort Curtain system does this automatically by introducing cool, fresh outside air.

There is today no possible way to achieve all these advantages at so little cost—except with the Lennox Comfort Curtain. The system is completely flexible, uses child-proof wall- or bookshelf-ducts, installs readily in any size or design of school, comes completely equipped with a "laboratory matched" control system. Send coupon below for free booklet.

LENNOX

© 1958 Lennox Industries Inc., founded 1895; Des Moines and Marshalltown, Ia.; Syracuse, N. Y.; Columbus, O.; Decatur, Ga.; Ft. Worth; Los Angeles; Salt Lake City. In Canada: Toronto, Montreal, Calgary, Vancouver, Winnipeg.



The Lennox Air Processing Unit introduces fresh air in adjustable volumes (A); transmits warm air (B) from adjacent or remote heating unit; continuously recirculates indoor air (C); filters air clean (D). Lennox' exclusive floating blower (E) and acoustical lining (F) assure a degree of quietness never before achieved.

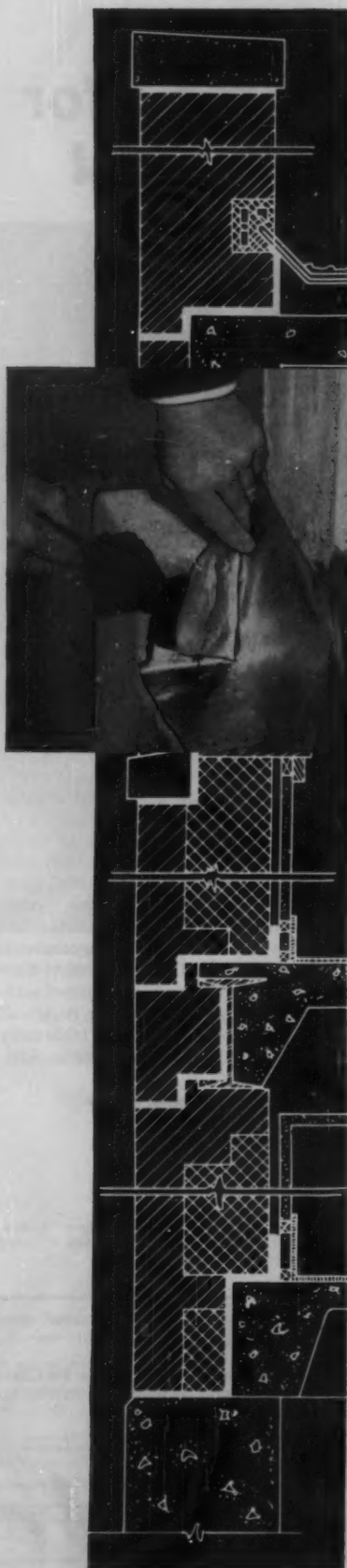
**Lennox Industries Inc., Dept. AR-84
1701 E. Euclid Ave., Des Moines 5, Iowa**

Gentlemen: Please send me your free booklet on the Comfort Curtain system of classroom heating and ventilating.

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There's a **WASCO FLASHING** for every waterproofing need



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Each of these flexible, prefabricated flashings is made and distributed by a single specialized organization which has been a leader in thru-wall flashing since 1935. Because Wasco manufactures a complete line, your Wasco Man can help you find the right flashing for each waterproofing problem.

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SKYDOMES® FLASHING ACRYLITE® TUB and SHOWER ENCLOSURES

BRIXMENT MORTAR

Has Better Water-Retention



Place a dab of Brixment mortar and a dab of ordinary cement-and-lime mortar on a brick. Wait a minute, then feel each mortar.



The one that stays plastic longer will be the one having the highest water-retention. Feel the difference with Brixment mortar!

—AND HIGH WATER-RETENTION IS ESSENTIAL TO WELL-BONDED, WATERTIGHT MASONRY

Water-retaining capacity is the ability of a mortar to retain its moisture, and hence its plasticity, when spread out on porous brick.

High water-retaining capacity is of great importance in mortar. If the mortar does not have high water-retaining capacity, it is too quickly sucked dry by the brick; the mortar stiffens too soon, the brick cannot be properly bedded, and a good bond cannot be obtained.

Brixment mortar has high water-retaining capacity. It strongly resists the sucking action of the brick. Brixment mortar therefore requires less tempering, stays smooth and plastic longer when spread out on the wall. This permits a more thorough bedding of the brick, and a more complete contact between the brick and the mortar. The result is a better bond, and hence a stronger and more water-tight wall.

LOUISVILLE CEMENT COMPANY, LOUISVILLE 2, KENTUCKY

Cement Manufacturers Since 1830

Sightline® FOR SEEING COMFORT



A TOTALLY NEW INDIRECT LIGHTING SYSTEM

Aluminum extrusions
absorb ballast noise
and dissipate heat

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corrosion resistance

UL approved wireway
for 60° circuit wiring

Snap-out plastic
guaranteed against
discoloration

Rigid end plates for
perfect alignment

Patented 45° swivel
suspension system

Heavy gauge,
die-formed,
slotted
reflector

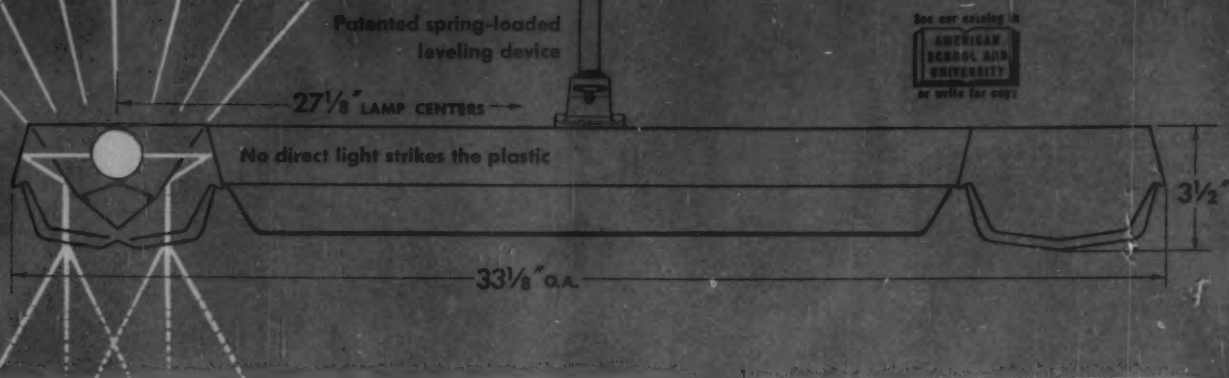
27 1/8" wide
lamp spacing

All-white appearance
blends with ceiling

Snap-out ballast enclosure covers

Patents Pending

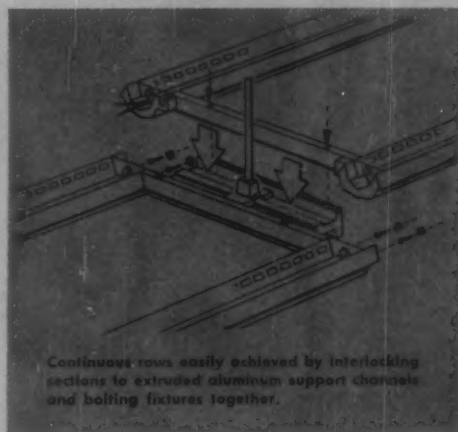




A truly integrated, totally indirect lighting system, Sunbeam SIGHTLINE® is engineered to produce high intensity illumination with minimum "overhead" contrasts resulting in the most comfortable, glare-free seeing conditions. This is especially important in areas where visual tasks are critical. SIGHTLINE® excels in every respect to ASA School Lighting Standards. Crisp, clean, airy styling and thin, widely spaced cross channels of the all-white SIGHTLINE® system blends inconspicuously with most interiors. High efficiency of 82%, extremely low brightness of less than 100 ft-Lamberts on ribbed plastic diffuser and minimum maintenance means long-term economy. No direct light strikes the snap-out plastic assuring long life and freedom from discoloration. The extruded aluminum cross channels provides more than solid support to the SIGHTLINE® system. They also effectively minimize ballast hum and dissipate ballast heat. A strong, test-proven suspension system with patented 45° swivels top and bottom allows maximum installation flexibility. An aluminum-alloy casting at the bottom incorporates a spring-loaded, self-leveling device and a finger-controlled fine vertical adjustment feature. For utmost simplicity, the SIGHTLINE® is easily ordered by complete rows as required by room size and lighting level desired.

Don't write your next "spec" until you've seen our complete brochure #A-2a.

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Continuous rows easily achieved by interlocking sections to extruded aluminum support channels and bolting fixtures together.

Absolutely no glare, either direct or reflected, comes from SIGHTLINE® illumination. SIGHTLINE® illumination permits maximum visual acuity with no loss of contrasts at seeing task. SIGHTLINE® excels in every respect to ASA School Lighting Standards.

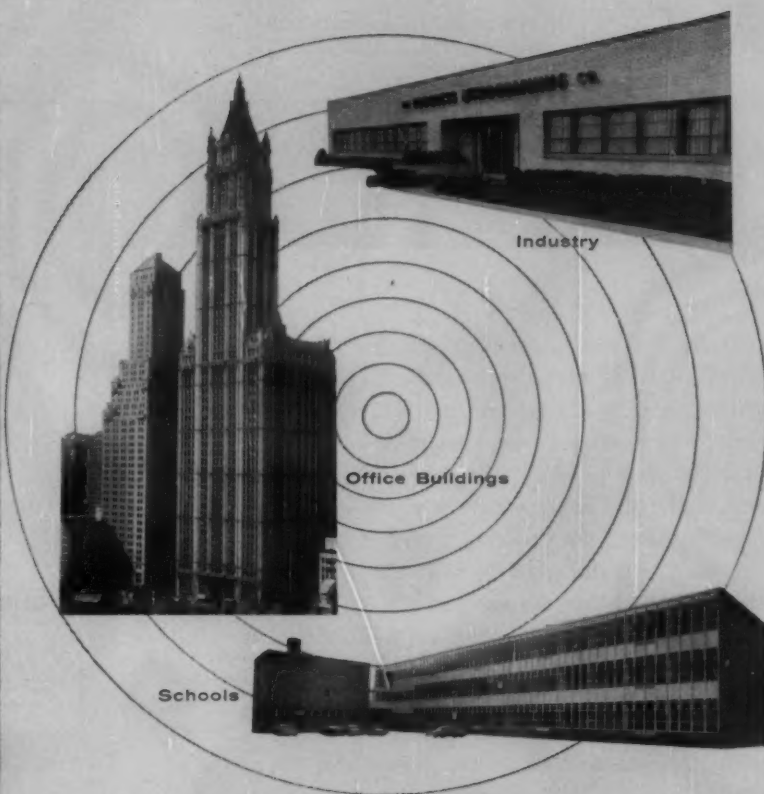
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Sunshades made of pure white patterned glass in extruded aluminum framing surround the nearly completed Unit "A" of the Research and Development Center of Thompson Products, Inc., Cleveland, Ohio. Architects: Minoru Yamasaki & J. W. Levinweber, A.I.A., Birmingham, Michigan.

How Blue Ridge solves "human" problems in industrial buildings!

Never in the history of architecture has greater emphasis been placed on the "humanities" in the design of industrial buildings—such as the relationship of building design to the people inside, as well as to the community. Here are some of the ways that bold and imaginative use of translucent, patterned glass has helped solve some of these "human" problems:

Natural daylight without heat or glare

For the morale and efficiency of employees, an abundance of natural daylight is always desirable



By R. W. Rigg,
Vice President
Blue Ridge Glass

... if it can be admitted into a building *without* discomforting sun heat and glare.

One way to solve this problem is to hang a projected sunshade of patterned glass on the exterior of a building. It will reflect and dissipate sun heat *before* the rays hit the windows behind and below it. Here Huewhite® Patterned Glass is excellent because its very wide light distributing quality

**"Blue Ridge Patterned Glass
serves human and aesthetic needs"**

(that is almost uniform down to an incident of 15 degrees) reduces glare to a minimum.

**Glass for structural beauty
and occupant comfort**

Exterior beauty—the kind a community takes pride in—can also help make the building occupants more comfortable. The factory office unit, at left, is an example. It wears a shining face of gleaming Glacier White Huetex*. Beautiful to look at . . . textured to subdue harsh reflections.

On the back of this $\frac{5}{16}$ "-thick tempered glass is fused the ceramic enamel that gives the glass its color. And protecting the enamel is a welded-on coating of atomized aluminum which acts as a barrier to radiant energy—cuts heat gain in summer and heat loss in winter.

This, then, is Huetex—modern, beautiful and maintenance-free. It sheds soot and grime with every rainfall and its impervious surface resists corrosive moisture that hangs heavy in industrial areas and clings to ordinary building walls.

Light, privacy, beauty

In partitions, too, Blue Ridge Patterned Glass serves human and aesthetic needs. As these office en-



The Fastener Division of National Lock Company, Rockford, Ill., was selected by the editors of *Factory Management and Maintenance* magazine as one of the outstanding industrial plants built in the U. S. during 1957. Glacier White patterned glass spandrels of Blue Ridge Huetex form the curtain walls of the offices. Factory units on either side are glazed with AKLO Heat Absorbing Glass. Ragner Benson and Associates, Architects and Engineers, Chicago.

Blue Ridge Patterned Glass enhances the Mills newly designed movable aluminum-frame partitions at the offices of the Mills Company plant in Cleveland, Ohio.



closures demonstrate, occupants can be alone . . . private. And the only thing shut out is distraction.

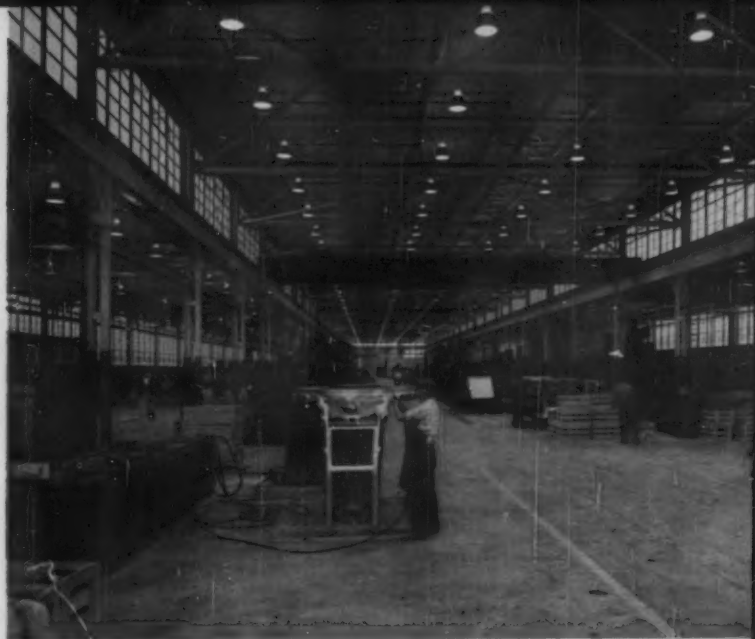
For with Blue Ridge Patterned Glass you can create a new and friendly atmosphere. A cordial warmth, with light flowing softly from one office to another. A sense of airy spaciousness so friendly to work in, so handsome to look at, so crisply businesslike. Practical, beautiful . . . in patterns of great variety.

Relief from heat and eyestrain

In factory areas men work, sweat, strain their eyes when walls are glazed with ordinary glass. Efficiency drops. Material spoilage increases.

For relief from solar heat and sun glare, the factories shown here were glazed with Blue Ridge AKLO* Glass. By its special composition, AKLO Glass absorbs and excludes practically all heat-loaded infra-red rays of the sun. This heat is dissipated, much of it externally, so that incoming solar heat is substantially reduced—over three times more sun heat is filtered out by AKLO than by ordinary glass of equal thickness. Its blue-green color even makes interiors *look* cooler.

Glare reduction is its other human benefit. Maximum daylight transmission is that portion of the spectrum most restful to the eyes—blue, green and



Walls of AKLO Heat Absorbing Glass help reduce sun glare and solar heat at the Steel Products Company, Division of Kelsey-Hayes Company, Springfield, Ohio. Architects: Zeller & Hunter, A.I.A., Springfield.

*Registered Trade-Mark—
Licensed by Corning Glass Works



East wall of the G. S. Blakeslee & Company's plant in Chicago is glazed with AKLO to filter out sun heat and glare. Engineers-Builders: Abell-Howe Co.



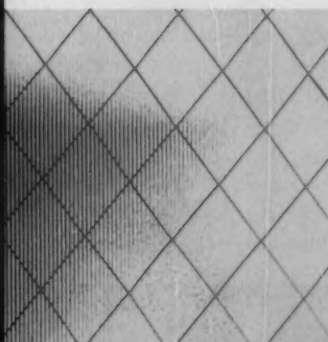


yellow. This gives a higher quality of lighting that makes seeing easier, reduces eye fatigue. AKLO easily pays for itself in greater comfort, less material spoilage and lower air-conditioning cost.

Wired glass gets a face lifting

Now the aesthetic as well as the practical can be served. Practical because wire-reinforced glass offers protection against shattering and is an approved fire-retardant. Practical because the texture of patterned glass softens and diffuses direct sun rays.

Aesthetic because Blue Ridge has combined two beautiful patterns with wired glass. The lustrous textured beauty of its patterned glass contrasts with the geometric symmetry of its NUWELD® wire mesh. The result—a decorative material that's handsome and contemporary and can be used anywhere without apology. Write today for samples.



These skylights face north and are glazed with 1/4" Skytex Wired Glass. The glass is not tinted—the blue you see is the sky color showing through. American Cabinet Hardware Co., Rockford, Ill.

Patterns shown approximately one-half size.

Johnson & Johnson
Engineers-Architects, Inc.

For additional information on Blue Ridge Glass, look in Sweet's Architectural Files 7a/Li, 3c/BL and 16d/BL. Also Sweet's Industrial Construction File 3f/Li, Light Construction File 1f/Li and Plant Engineering File 5b/BL.



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Detail from California Masonic Memorial Temple,
San Francisco, California

Architect: Albert E. Roller, A. I. A.

Locks: Schlage

These unique Crest design escutcheons incorporating the Masonic insignia were created especially for this handsome building...another example of the craftsmanship of America's most distinguished lock brand — Schlage.



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What's more, you can either specify Mobilwalls in a standard Permacolor tone . . . or let VMP match your own color swatches precisely and *permanently*.

NEW VMP PERMACOLOR MOBILWALLS

VMP PERMACOLOR vs ABRASION Abraded hour after hour, day after day, under a rough, heavy roller, VMP Permacolor Mobilwall samples proved their lifetime resistance to normal wear and tear.

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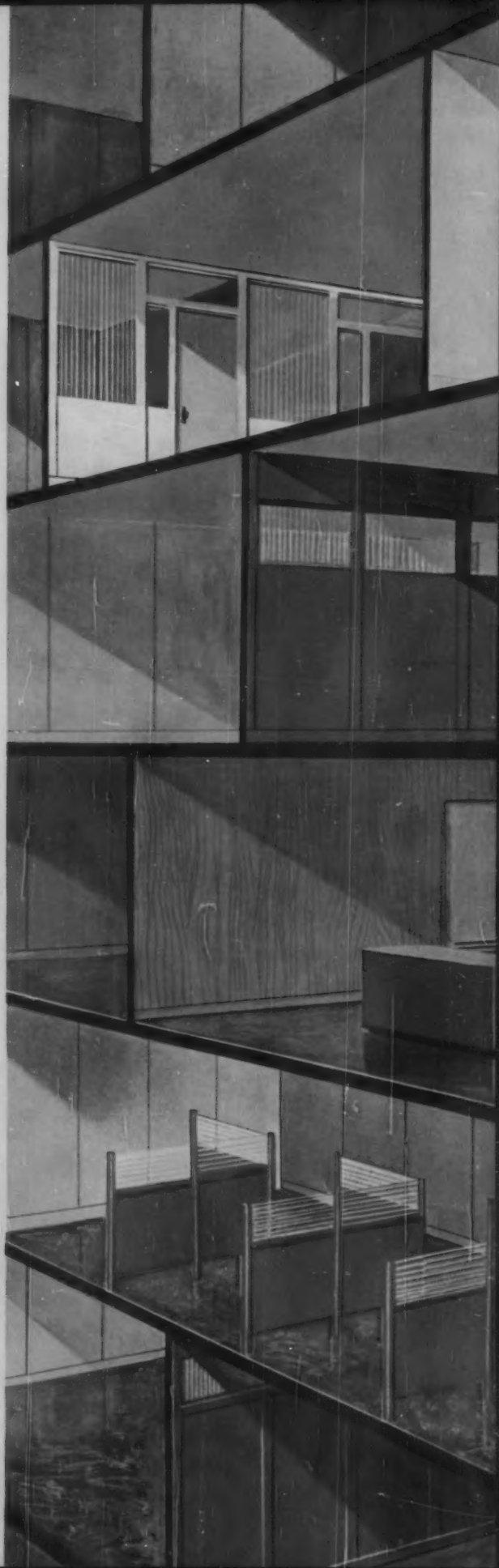
In the last two years, 19 of America's 20 largest corporations installed VMP Mobilwalls . . . such leaders as Ford Motor Company, U. S. Steel, General Electric, Chrysler and Western Electric. In smart offices . . . high-traffic hallways . . . reception areas . . . laboratories . . . VMP Mobilwalls give the rigidity and looks of permanent partitions. Yet they can be changed almost as easily as an organization chart!

SEE SWEET'S 1958 ARCHITECTURAL FILE, Section 22, Number 22a/VI for complete specifications and engineering advantages of VMP Mobilwalls. A full range of the most rugged, rigid, interchangeable and easily wired movable metal partitions in the entire modular construction field. *Now finished in time-defying Permacolor.*



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Architect: Walton Beckett & Associates—Los Angeles, Calif.



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Be sure color and texture are not damaged by harsh, so called "quick" cleaners.

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Ask him to survey the floors on your boards, recommend treatments, serve as your "Job Captain".

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The Tishman Building

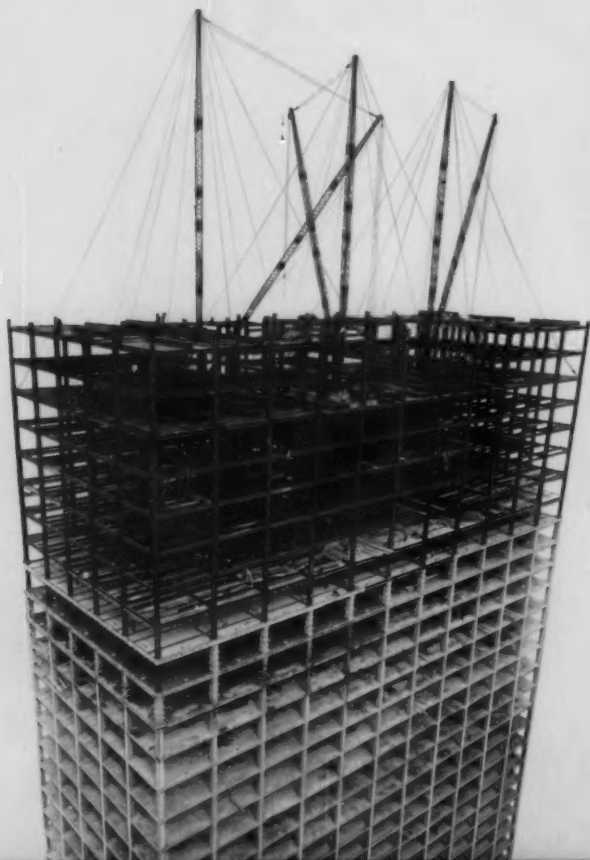
666 FIFTH AVENUE • NEW YORK CITY

A Bethlehem Steel report on a
distinguished new office tower



Waterfall by sculptor Isamu Noguchi in arcade has stainless steel fins, water flowing over contoured glass. Arcade is paved with crab orchard stone.

Sculpture, Stone and Steel



An elegant newcomer to one of the world's most elegant thoroughfares is 666 Fifth Avenue, the 39-story office tower occupying the entire block-front between 52nd and 53rd Streets. A project of the Tishman Realty and Construction Co., Inc., the 1,000,000-sq-ft steel-framed building is the second largest skyscraper completed in postwar Manhattan.

The designers gave special attention to the open arcade area where wide expanses of stone paving and the unique sculptured waterfall add a touch of opulence. This effect is furthered by the wide spacing of structural columns, which make possible unusually wide, unobstructed passageways. This was achieved by offsetting a number of columns and spanning the extended spaces with long, heavy plate girders. These girders support the columns which return to their normal alignment at the second level.

Owner and builder: Tishman Realty & Construction Co., Inc.; *architect:* Carson & Lundin; *structural engineer:* Victor Mayer; *mechanical engineer:* Cosentini Associates.

STEEL FRAMEWORK • The 13,300-ton steel frame was fabricated and erected by Bethlehem, using high-strength bolts for field connections. 666 Fifth is one of the tallest buildings ever constructed with a bolted frame.



HANDSOME OFFICES • Steel interior walls, partitions, and air-conditioning enclosures, attractively painted, contribute to the pleasing decor. In some cases the walls are handsomely papered. Many tenants also selected steel venetian blinds. Bethlehem supplies sheet steel to manufacturers of all these products.



ELECTRONIC ELEVATORS • Operatorless elevators are electronically controlled to adjust to traffic patterns. The 22 elevators will carry an estimated 2 million passengers 133,000 miles per year. A big job, and Bethlehem Elevator Rope was selected for it.





STEEL PARTITIONS SAVE SPACE

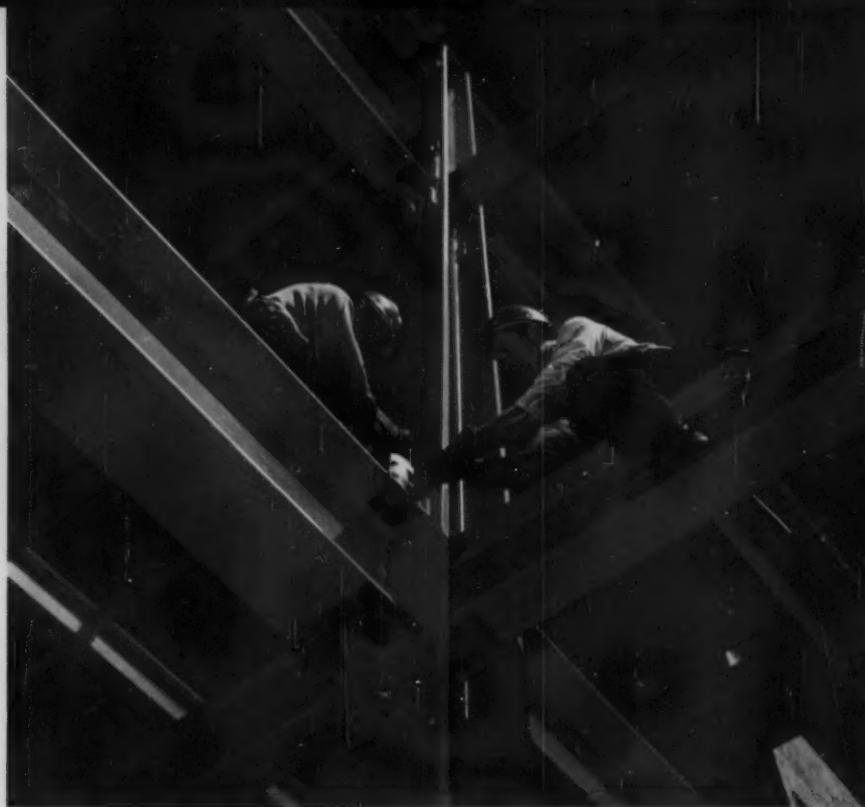
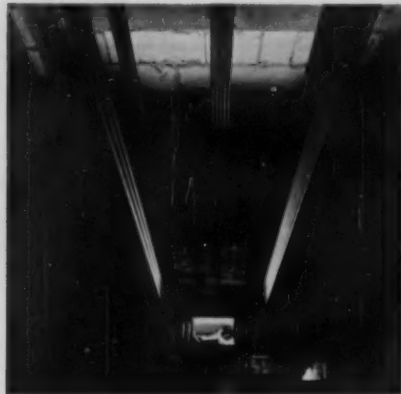
Virtually all the tenants selected steel interior wall partitions developed specially for this building. Two inches thinner than conventional walls, they saved an estimated 16,000 sq ft of usable space. Steel wall panels are quickly installed, readily moved to permit office changes.

• • • • •

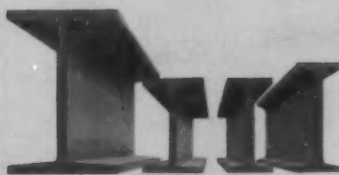
Bethlehem supplies many forms of steel to manufacturers of such products as wall partitions, radiator enclosures, steel windows, venetian blinds, steel furniture, lighting fixtures, etc.

HIGH-STRENGTH BOLTS • They clamp tighter than rivets, can be installed fast and quietly. Bethlehem is a major producer of these popular fasteners. 

ELEVATOR ROPE • Blue-ribbon office buildings throughout the nation use tough Bethlehem elevator rope for the ultimate in reliable service. 



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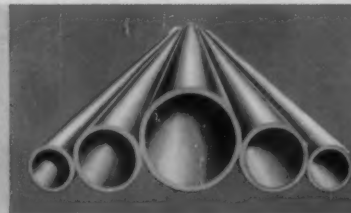
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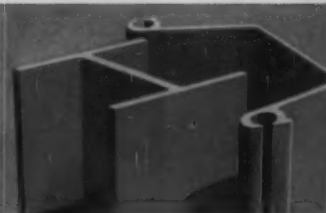
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First Methodist Church, Garden City, Kansas. Lehigh Mortar Cement was used with brick, concrete block, stone, and tile.



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And architect Howard T. Blanchard adds, "Due to the fine results on previous projects, we readily approved Lehigh Mortar Cement for this project, and were equally pleased with the results."

Architect: Howard T. Blanchard
Garden City, Kansas

Contractor: Stehwein Construction Co.
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Masonry Contractor: R. W. Scott
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Dealer: McAllister Fitzgerald Lumber
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It is reports like this that explain why Lehigh Mortar Cement is preferred by builders and approved by architects.

LEHIGH PORTLAND CEMENT CO.
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Put on a good face
Put in*

INSULROCK

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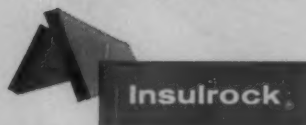
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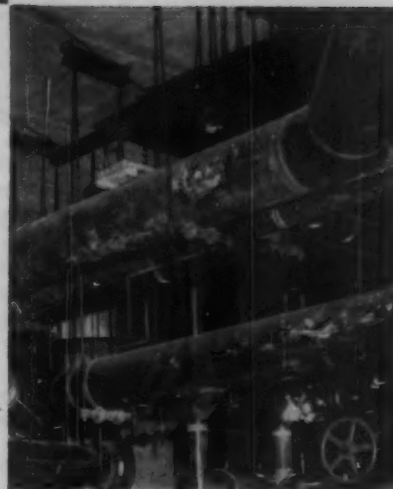
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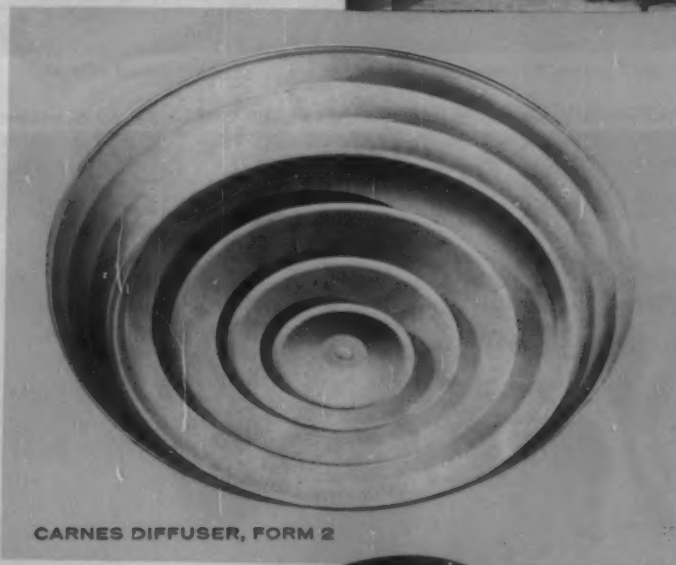
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On these two pages are three examples showing how architects are using Andersen WINDOWALLS to achieve interesting design and to provide beauty and convenience. Both types of Andersen Window shown are easy to open and close. They are exceptionally weathertight—thanks to traditional Andersen outstanding design and craftsmanship. All wood parts, of course, are Penta-treated for lasting protection against decay and termites.

For full specification data on Andersen WINDOWALLS, see Sweet's Files—or write Andersen for Detail Catalog and Tracing Detail Files. WINDOWALLS are sold by lumber dealers throughout the United States, and now in Canada.

Andersen Windowalls

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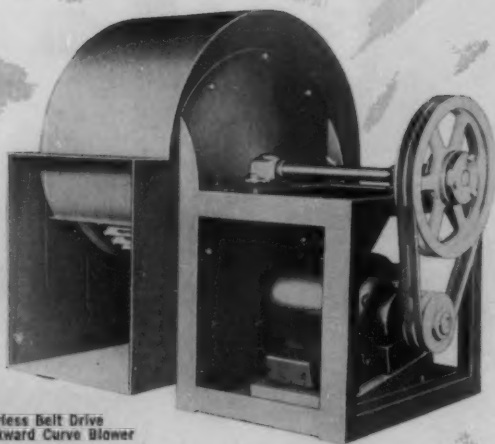
In the living room, Andersen Flexivents® combine with Flexiviews for picture-window effect with operating sash. E. F. Gordon, A.I.A., architect.





In this bedroom, architect Frank McGuire used Andersen Casement Units to provide a king-size view, to admit cooling breezes.
More wall space is available with the smaller Andersen Casement Units. Architect is Kenneth E. Wischmeyer.

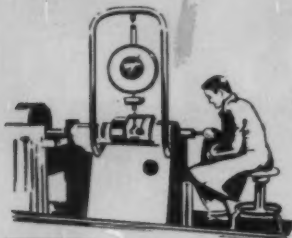




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- BRASS has no equal for serviceable and satisfactory plumbing fittings.

Sparkling beauty, first quality, reliable performance, characterize new Kohler fittings—in harmony with Kohler fixtures.

There are two styles—the Galaxy series with either brushed or polished chrome finish, and the Constellation series with polished chrome.

They operate easily, fit the hand comfortably, respond to finger pressure.

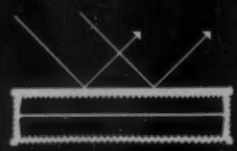
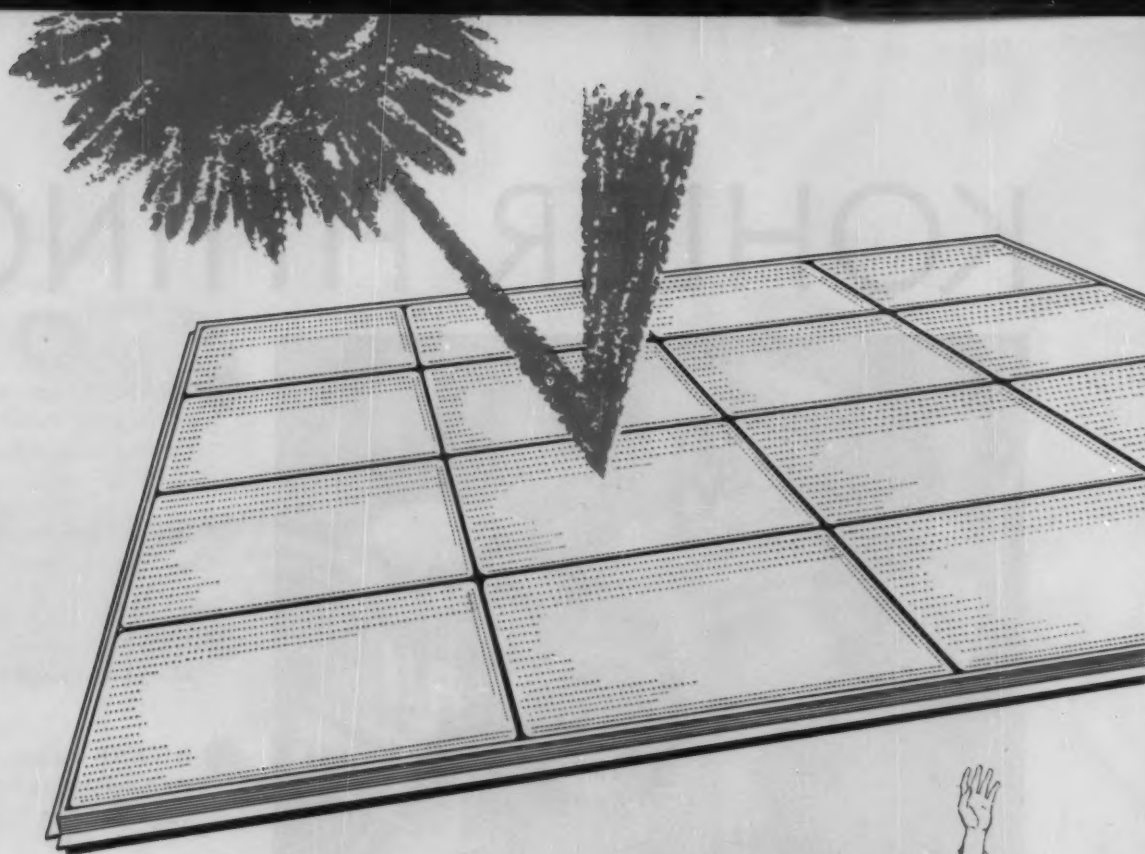
Interchangeable units afford positive action, maintain uniform flow at volume desired.



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BUILT-IN PRISMS accept cool North light and low-angle winter sun, reflect hot, high-angle spring and summer rays.

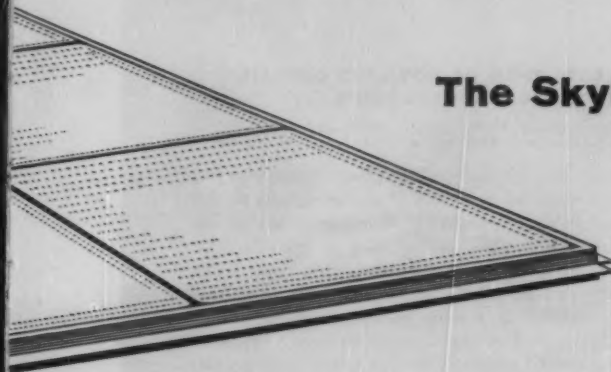


O-I 80-F GLASS BLOCK provide the same solar heat-controlling advantages to sidewall daylighting.

NOW!...SAVE AS MUCH AS 30%

ON FAMOUS TOPLITE...

The Skylight that reflects the HOT SUN!



- **Improved Performance**
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- **Thiokol-type Weather Seal**

Now you can have even greater performance, strength and durability in Toplit Roof Panels—at up to 30 per cent saving in price!

The substantial price reduction on these improved glass panels has been made possible by the development of a revolutionary new concrete. This new concrete is used to form the thin-ribbed grid which supports the light-transmitting glass units.

A specially designed perimeter cuts installation costs, too—because these new panels need *no expensive curb*. They project only 3" above the roof. A new O-I Thiokol-type sealant assures weather protection.

Built-in, light-selective prisms in O-I Toplites readily transmit cool North light and low winter sun, reject most of the light and heat from the high, hot summer sun. Result: a building's occupants are insulated from solar heat . . . daylight is more uniformly distributed throughout the year.

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subsidiary of Owens-Illinois, Toledo 1, Ohio

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3 Buildings—3 Specifications

ALL USE TECTUM ROOF DECKS



BILL ADOLPHSON'S BOWLING CENTER, GREENSBURG, PENNSYLVANIA

Architect: Gordon C. Pierce, Greensburg, Pennsylvania
General Contractor: L. P. Wineman, Greensburg, Pennsylvania

The roof deck of this bowling alley—as well as the sidewall material—become important assets to the success of this new building. The continual thunder of rolling balls and flying pins is considerably lessened with Tectum sound-absorbing roof decks and sidewall material. Tectum insulates, too, and is noncombustible, termite proof and workable as wood. Here's functional good looks at work—a single material responsibility for good construction, durability, appearance and effective noise reduction.



BEULAH PRESBYTERIAN CHURCH, PITTSBURGH, PENNSYLVANIA

Architects: Hoffman & Crumpton, Pittsburgh, Pa.
General Contractor: Ferraro Construction Co., Pittsburgh, Pa.

Good acoustics go hand in hand with good appearance in this modern house of worship. Tectum decks play an important part in holding costs to appropriated funds, as these economical panels are laid directly over secondary framing members without need for further insulation, acoustical treatment or sheathing. Textured Tectum decks are warm and inviting, and audience appreciation of the services is greatly improved.

FURNACE BROOK SCHOOL, QUINCY, MASS.

Engineers: Anderson-Nichols & Company, Boston, Mass.
Architect: Earl M. Harvey, A.I.A., Boston, Mass.
General Contractor: L. C. Blake Construction Co., Boston, Mass.

Keeping costs in line to meet the needs of a growing school age population is a challenge met perfectly when Tectum decks are installed. Structural, noncombustible, insulating and acoustical panels go down fast. Deck and interior ceiling are completed in one operation. Costs are reduced when Tectum is laid over joist or beam. Hundreds of schools in all climates are utilizing this new concept with marked success. Write for complete information.



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Overly HI-FI BAND SHELL

...the greatest advance in outdoor stage acoustics, beauty, color, comfort, convenience and durability combined

Overly's Hi-Fi Band Shell is a joint development with Alcoa, nationally known acousticians, bandmasters, architects and designers. It is the most complete answer to the outdoor stage acoustical needs of today and tomorrow. It is a composite of the improvements sought by schools, communities and others desiring better recreational and cultural facilities. Offered in four basic sizes, this Overly unit is adaptable for a wide variety of civic and cultural functions in addition to live band concerts.

Features. Durable; all aluminum. Choice of non-fading colors. Provides well dispersed live sound so that, no matter where the listener sits, he will hear well.

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Prestige Photographers—One of a series. At the right, Vic Skrebneski of Chicago's Studio One, who has produced some of the most exciting work of the Midwest's new photographic exhibits, captures the vibrant charm of Brazilian Rosewood by Stem in this self-portrait. ➡

PRESTIGE VENEER ... ROSEWOOD, BEAUTY FROM THE TROPICS

South America's exotic beauty can be captured by specifying STEM veneer from log samples

Romance with South America thrived in the Gay Nineties—one of the world's most handsome woods, Brazilian Rosewood, from the heavy tropical forests along the sea from Rio to Bahia, captured the fancy of our Victorian progenitors, with the result that much of our better-grade furniture during this period was made from this beautiful exotic wood. Brazilian Rosewood still offers fascinating beauty—in veneers manufactured by Stem. On any project requiring 1,000 square feet or more of fine wood paneling, Stem affords the important and additional means of capturing fully this fascination by specifying from actual log samples the veneer of your choice. You can be sure then of just the right color gradation, just the right configuration of grain—the perfect background. Stem offers the *world's largest collection* of architectural flitches (logs or parts of logs cut into veneers) from which you can choose Brazilian Rosewood and many other fine, rare architectural veneers. If you identify in your original specifications the selected flitches by wood specie and flitch number, only then can you be comfortable in your confidence that the finished installation will achieve the full elegance and exotic charm to which you are entitled when you select a decorative background with an historical tradition. Don't compromise for less.

CHESTER B. STEM, INC., NEW ALBANY, INDIANA

RARE WOODS FROM STEM



CLASSROOM AIR CONDITIONING more and more is becoming an important factor in school design. Architects everywhere are recognizing the trend in their structural considerations for school buildings.

Educators, too, are thinking—talking—stressing air conditioning. They have found that classroom temperature, air movement and humidity have a direct bearing on learning and development. They realize that it is just as important that a child be comfortable in hot weather as in wintertime.

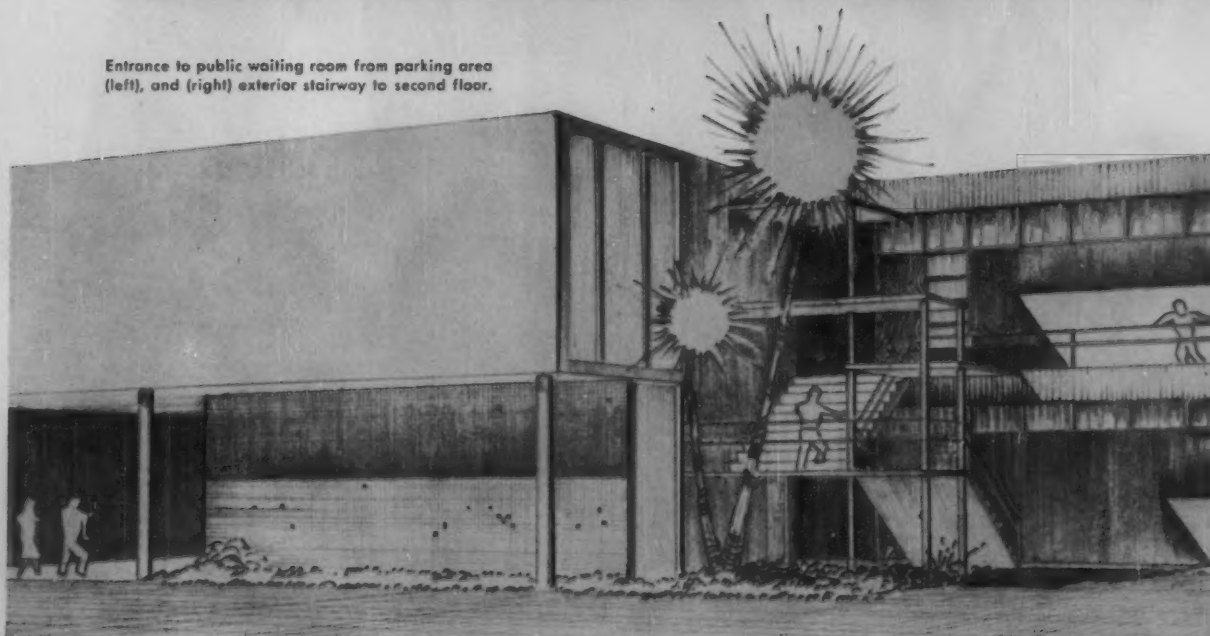
For these reasons, many schools are already air conditioned, or are planning for it in the future. Throughout the country, the need for air conditioning is being reflected again and again in basic school design. The building plan shown on these pages is an outstanding example.

Because of air conditioned design, this school building (including parking facilities) consumes only 1.2 acres, instead of the customary urban Florida total of 3.1.

Number four of a series . . .

The herman nelson file of

Entrance to public waiting room from parking area (left), and (right) exterior stairway to second floor.



A Florida firm designs school that saves money because it's AIR CONDITIONED

The design of a 20-classroom, 2-story urban Florida elementary school by Connell, Pierce, Garland and Friedman, Miami, Florida, factually proves that, in many instances, air conditioned schools can actually save money on capital investment and, at the same time, completely offset the increased operating cost of the air conditioning system.

HOW CAPITAL INVESTMENT IS SAVED — This school was designed for a densely-populated area of Florida. To take full advantage of natural cross-ventilation and avoid noise distractions, conventional schools have had to be spread out and sprawling. This required large plots. Since school boards have paid as much as 50 to 60 thousand dollars per acre for school property, total acreage is an extremely important cost factor.

Because of air conditioned design, this building consumes only 1.2 acres instead of the customary urban Florida total of 3.1 acres. Thus, 1.9 fewer acres are needed. The resulting capital savings are in direct proportion to the cost of land.



Compact, air conditioned design permits simple, functional "open-plan" plan, with space saving outside entry to second floor exterior corridor.



Classrooms are completely self-contained units except for feeding activity. Cafeteria contains folding tables that make benches for auditorium purposes. Additional chairs are stored under stage which doubles as a special visual education room. Walkways are covered.

air conditioned school design

HOW OPERATING COST IS OFFSET — Normally, a school of this size requires four custodians. In this air conditioned design, dust conditions are alleviated to the extent that only three custodians could adequately handle the work. The resulting salary savings would bring the operating cost of the air conditioning system down to \$5 to \$10 per day.

Many state school laws (including Florida's) provide that incremental teachers' salaries be paid from State to County School Systems on the basis of average daily attendance, rather than enrollment. County taxes must make up the difference when there are mass absences. There is evidence to prove that attendance at an air conditioned school is from three to eight percent greater than at a non-air conditioned school. Thus, increased attendance would further reduce the cost of operating the air conditioning system.

CAPITAL SAVINGS

WHEREVER LAND COSTS EXCEED \$17,700 PER ACRE, THIS AIR CONDITIONED DESIGN SAVES MONEY

Savings made possible by (1) elimination of typical heating system (2) elimination of cross-ventilation breeze sashes (3) reduction in size of main windows (4) elimination of top windows (5) use of plate glass plus only two operating windows (6) use of 9'-6" ceilings, and (7) use of only one door per classroom. \$41,400

Cost of combined air conditioning and heating system, using Herman Nelson air conditioning unit ventilators. \$75,000

Cost of air conditioning over and above saving. \$33,600

Assuming cost of land to be \$25,000 per acre, using 1.9 fewer acres would save. \$47,500

Actual capital savings directly attributable to air conditioned design. \$13,900

OPERATING SAVINGS

INCREASED OPERATING COST OF THE AIR CONDITIONING SYSTEM IS OFFSET BY THE SAVINGS INHERENT IN AIR CONDITIONED DESIGN

Approximate operating cost per day of air conditioning equipment, allowing for days when only fans would be in operation. \$30 per day

Elimination of one custodian at a salary of approximately \$3,000 per year, will reduce this to. \$5 to \$10 per day

The percentage increase in average daily attendance would more than offset this operational cost.

AAC

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hermel-cool II

UNIT VENTILATOR

with optional air conditioning



already selected by more than ¹⁵⁰~~100~~ schools

Will the school you are planning ever need air conditioning? The answer is definitely—yes. Architects and educators agree on the importance of the proper learning environment. And only air conditioning can assure that your school will have it when the weather outside is warm.

That's why today—less than a year after its introduction—the HerNel-Cool II unit ventilator with optional air conditioning has been selected for use in more than 150 schools, which are either air conditioned now or have planned for it.

HerNel-Cool II is the first unit ventilator to offer optional air conditioning, as well as heating, ventilating and natural cooling (with outside air). Units can be installed so the school enjoys the usual bene-

fits of Herman Nelson unit ventilation, including the famous DRAFTSTOP system—the only type of draft control that is compatible with air conditioning. Then at any time—immediately, or whenever the school budget will allow it—the mere addition of a chiller in the boiler room is all that is needed for complete hot weather air conditioning.

This can be accomplished without disruption of classroom activities... without expensive alteration and installation charges. The cost is far less than for separate heating and air conditioning systems—both for installation and operation.

Want information? Write today to Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., 215 Central Ave., Louisville 8, Ky.



AAF

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UNIT VENTILATOR PRODUCTS

System of Classroom Cooling, Heating and Ventilating

JUST HOW MUCH DOES PROVISION FOR FUTURE CLASSROOM AIR CONDITIONING COST? The answer is: probably far less than you think—when you install HerNel-Cool II air conditioning unit ventilators. Actually, it costs only fifteen to twenty cents per square foot more than the cost of basic heating and ventilating equipment in average new construction—or between one and two percent of total building cost. Complete, immediate air conditioning is approximately fifty to fifty-five cents more.

By using Herman Nelson unit ventilators, schools have held heating and ventilating costs—including provision for future air-conditioning—to a total of less than \$1.35 per square foot. Other schools have heating, ventilating and immediate air conditioning—for a total per square foot cost of less than \$1.70! (And, in many cases traditional design concepts were used.) These are current costs, too! HerNel-Cool II unit ventilators have been available for little more than a year.

Look at the costs shown below. They are particularly interesting when you realize that they are truly representative—for Herman Nelson equipped schools in all parts of the coun-

TEN SCHOOLS ON WHICH BIDS WERE TAKEN ON HERMAN NELSON UNITS FOR HEATING AND VENTILATION ONLY

School	Total Cost	Total Cost Per Sq. Ft.	Heating & Ventilating Cost Per Sq. Ft.	Per Cent of Total Cost
A	\$ 659,000	\$15.33	\$1.15	7.6
B	416,211	9.05	1.13	13.4
C	435,270	11.21	1.48	13.2
D	131,223	9.00	1.98	22.0
E	260,164	13.56	1.47	10.9
F	1,013,960	11.27	1.25	11.1
G	577,193	8.39	1.07	12.9
H	310,178	9.84	1.05	10.7
I	344,291	10.43	1.11	10.7
J	118,147	12.38	2.09	16.6
Average	\$ 426,344	\$11.05	\$1.38	12.8

SEVEN SCHOOLS ON WHICH BIDS WERE TAKEN ON HERMAN NELSON UNITS FOR HEATING AND VENTILATION PLUS FUTURE AIR CONDITIONING

School	Total Cost	Total Cost Per Sq. Ft.	Heating & Ventilating Cost Per Sq. Ft.	Per Cent of Total Cost
K	\$ 646,000	\$15.49	\$1.32	8.5
L	423,511	9.21	1.39	14.0
M	356,800	10.04	1.55	15.4
N	2,813,000	15.44	1.79	11.5
O	2,745,381	16.54	1.76	10.7
P	1,211,000	10.40	1.55	14.9
Q	500,000	15.63	1.72	11.0
Average	\$1,259,385	\$13.23	\$1.57	12.3

Avg. add. cost provision for future air conditioning...0.19

FIVE SCHOOLS ON WHICH BIDS WERE TAKEN ON HERMAN NELSON UNITS FOR HEATING AND VENTILATION PLUS COMPLETE AIR CONDITIONING

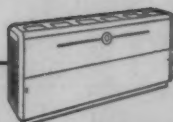
School	Total Cost	Total Cost Per Sq. Ft.	Heating & Ventilating & Air Conditioning Cost Per Sq. Ft.	Per Cent of Total Cost
R	\$ 690,000	\$15.04	\$1.88	11.7
S	371,100	10.44	1.95	18.7
T	406,463	14.30	2.41	16.8
U	360,700	13.11	2.22	16.9
V	1,094,387	11.55	1.60	13.8
Average	\$ 584,530	\$13.10	\$7.01	15.6

Average added cost for complete air conditioning.....0.71

try. Locations range from California to New York, from Wisconsin to Georgia.

Complete cost studies—for schools employing immediate air conditioning as well as for those which are planning for its installation later—are available upon request.

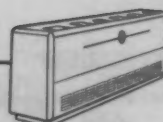
Get all the facts now. Classroom air conditioning—immediate or eventual—is being included in more and more school planning. You'll want to consider it in yours. Write today to Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., 215 Central Avenue, Louisville 8, Kentucky. In Canada: American Air Filter of Canada, Ltd., Montreal 9, Quebec.



Hot water or steam unit ventilators



Amervent unit ventilators



Electric unit ventilators



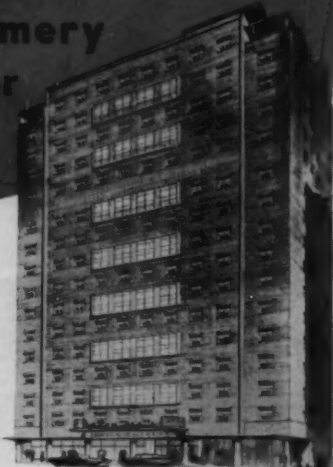
UniVent gas-fired unit ventilators

New

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AN EXTRA
24"

SAVE 10¢
PER
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New **WIDER**
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save labor, waste and money

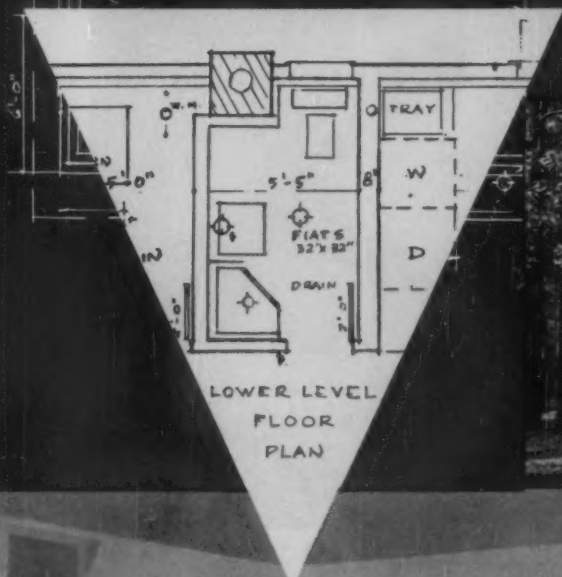
Don't buy any fiber glass panels until you get a quote on new wider Structoglas corrugated. Two new widths (51" for skylights, 50" for glazing, both covering 48") give you more installed coverage area per dollar than any other panel. Wider Structoglas has fewer overlaps, needs less fasteners, takes less time to install. You actually save 10¢ per square foot when you install 51" Structoglas instead of ordinary 27½" panels.

Specify Structoglas—the reinforced plastic panels that eliminate glass breakage, transmit diffused natural light.

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**RALPH WOODS HALL
MURRAY STATE COLLEGE
MURRAY, KENTUCKY**

ARCHITECT:

Lee Potter Smith & Associates, Paducah, Ky.

GENERAL CONTRACTOR:

O'Brien & Padgett, Memphis, Tennessee

ROOFING CONTRACTOR:

George A. Hannin Company, Paducah, Ky.



On Murray State College's new dormitory . . .

A RUBEROID BUILT-UP ROOF

Was engineered to fit the job

Ralph Woods Hall, the new dormitory for women at Murray State College, has a unique design feature. Three dormitories are joined into one by connecting three wings with a large circular lobby.

But there is nothing unique in the use of Ruberoid Built-Up Roof specifications. The fact that Ruberoid Built-Up Roofs are the answer to many roofing problems has long been known to progressive architects and builders everywhere.

In engineering the roof construction to fit the needs of the building, three different Ruberoid specifications were used. The largest portion of the roof—398 squares—is Coal Tar Pitch and Tarred Felt with a Gravel Finish (Specification #202). A second section is a

Dubl-Coverage Mineral Surface Roof (Specification #159). In still another area, Asbestos Felt and Asphalt Felt with a Smooth Finish (Ruberoid Specification #208) was used.

As with all Ruberoid Built-Up Roofs, rigid standards of manufacture will assure Murray State College of many more years of trouble-free service for their roofing dollar.

Ask your Ruberoid Approved Roofer to demonstrate the advantages of Ruberoid products when next you are faced with a built-up roofing job. You will find that there is a Ruberoid specification to fit whatever requirements you may have.



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A JAPANESE ARCHITECT SEEKS A NEW EXPRESSION

*The work of Kenzo Tange helps establish
a contemporary Japanese architectural idiom*

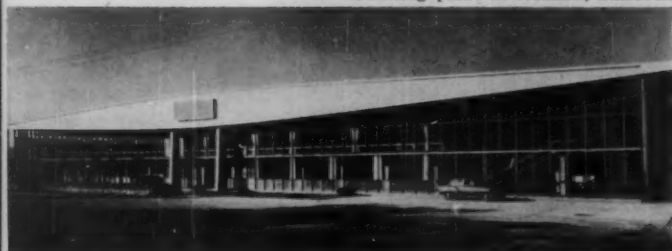
Tange and his fellow architects in Japan are endeavoring to combine what remains vital in their own architectural tradition, with whatever is dynamic in the work of their Western contemporaries. They are re-examining their tradition and testing its validity in terms of the social and technical changes in Japan. At the same time they modify and adapt Western architectural ideas in Japanese terms. These two interacting forces are, perhaps, producing a new architecture in Japan.

It is well known that Japanese architectural tradition has profoundly influenced contemporary building in Europe and America. The articulated wooden post and lintel skeleton construction of Japanese buildings finds its counterpart in the expressed steel cage of the modern skyscraper. Non-bearing walls suspended on a structural framework have for centuries been a characteristic of Japanese building. The use of a basic structural module to establish a flexible system of spatial organization to which an unlimited number of similar units may be added is a Japanese idea. Sensitivity to nature as expressed in careful relationships of indoor and outdoor space has affected Western design as much as the Japanese ability to develop abstract beauty from the simplest structural or natural elements.

Although contemporary Western design has evolved in part from the Japanese tradition to which the younger architects of Japan are sympathetic, these men are in turn influenced by the West. Western architecture in Japan appeared first as structural technique adapted to industrialization.

ARCHITECTURAL RECORD JULY 1958

Printing plant in Numazu, Shizuoka

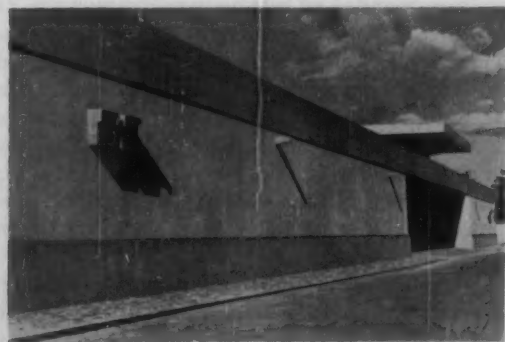


Hirogama

Convention hall in Shizuoka City



A printing plant (top), two views of a convention hall (middle) and a memorial hall (bottom) represent modern Japanese building types for which the traditional architecture of Japan offers no precedent. These buildings indicate three separate approaches to the creation of a modern Japanese idiom. The roof of the printing plant is cantilevered from a double row of posts, and the long narrow space formed by them is used as a passageway between the presses. The air conditioning apparatus is overhead in the steel truss. The convention hall was designed for multi-purpose use as an opera house, gymnasium, concert hall and cinema. Its roof is a reinforced concrete hyperbolic paraboloid which shelters 4500 persons. The austere concrete exterior wall of the Sumi memorial hall conceals an auditorium and well lit rooms which open on an interior court. The upper band of rough concrete conceals a terrace.



Sumi memorial hall

New types of buildings for which tradition provided no models were needed for new kinds of activities, and Western architects came to Japan to build them. The Japanese themselves went abroad to study with Gropius, Le Corbusier and Mies van der Rohe.

In a talk given at the University of Hawaii this year, Kenzo Tange said "I myself was very much impressed by Mies van der Rohe, his Seagram building under construction in New York and his Lake Shore Drive apartments in Chicago. It seems to me Mies has found out something essential of steel. He has created real expression of steel. I am also impressed and moved strongly by Le Corbusier, his Marseilles apartment, his High Court building and Secretariat building at Chandigarh in India.

I am also impressed by some of Nervi's work in Italy. It seems these men have created real expression of concrete. May I say frankly, other buildings did not impress me so strongly as these."

Of his own tradition Tange said "... modern architecture and Japanese traditional architecture have common characteristics—simplicity, standardization, openness, spaciousness and lightness. . . . Simplicity or standardization means sometimes the formalistic. Openness or lightness means sometimes weakness, yes weakness, for example, against weather and climate. . . . Now, lightness or openness or spaciousness in the physical and psychological meaning cannot satisfy peoples' energy or desires. They want more eternal or more durable feeling. They do not want weakness or tentativeness, but this weak and tentative feeling that we have in our tradition, sometimes appears in the so-called modern architecture of the world. Architecture always should be a reflection or expression of social structure. . . . This structure should not be considered static, but dynamic—always advancing forward from the past to the future . . . this advancing social structure has some kind of energy inside, otherwise it cannot move itself. I think this energy is hidden or sleeping in the peoples' bodies and minds but they do not recognize this energy in themselves. So we have to give the image to the peoples' desires. In order to find new solutions to satisfy the peoples' desires or energy, I myself, and other younger generation in our country are striving to overcome our traditional weakness and so called modernism, by trying to create new spaces and forms more suitable to their energy. This energy, it may be called vitality."



Concrete parabolic arch is memorial to Hiroshima dead. In background is north face of the memorial museum

Hiroshima Peace Hall Project

South face of the memorial museum

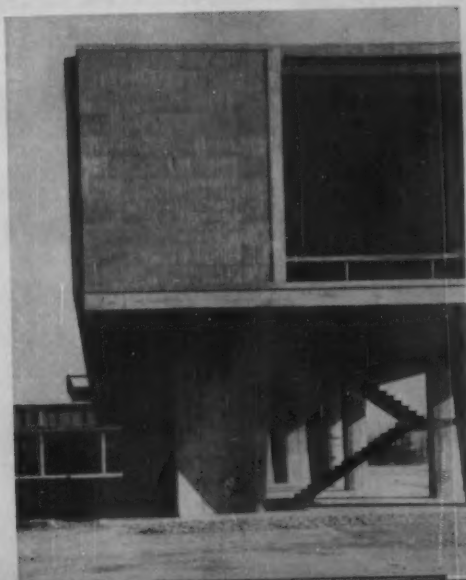
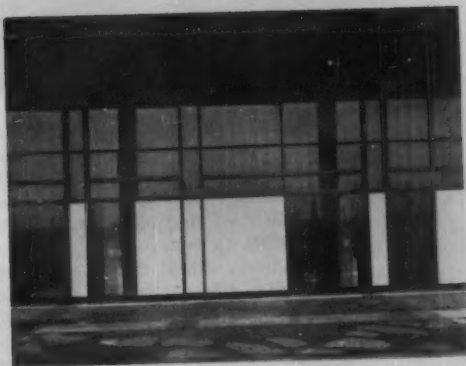


"I personally think techniques and materials are not only the means to construct and to furnish, but they are essential to us because they possess marvelous potentialities in themselves. Techniques and materials were created by science and inventions. However, we must not forget that contained deeply inside are the human desires or energy, or vitality of a progressive forward looking human." TANGE



The Hiroshima Peace Hall Project, begun in 1950 and finished in 1956, consists of three buildings placed on an east-west axis on a flat site of thirty acres called a Peace Park. To the north is a concrete arch memorial. The building to the east houses a small auditorium, gallery and library, and on the west is an assembly hall. In the center is the memorial museum (shown in photographs above and on opposite page). Concrete abutments (right) are by Noguchi. Sliding panels (third photograph from top) are used in the library building and recall the proportions of Japanese tradition.

Hiroshima Peace Hall Project





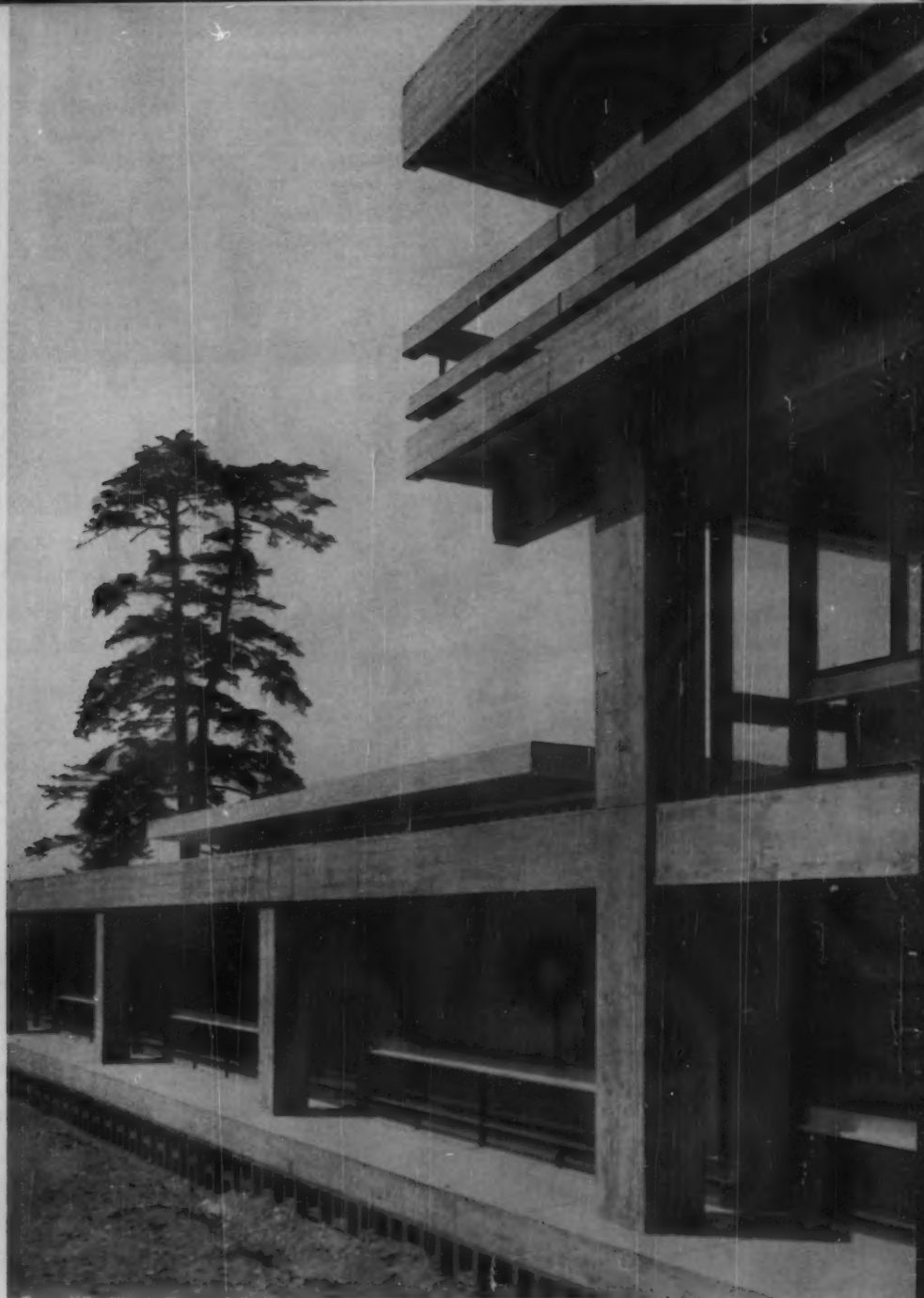
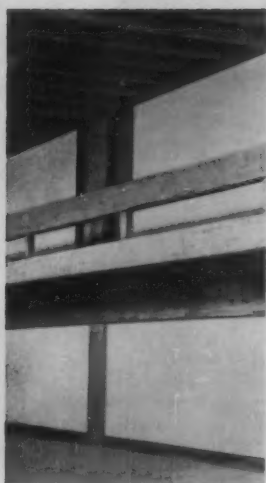
Kurayoshi City Hall

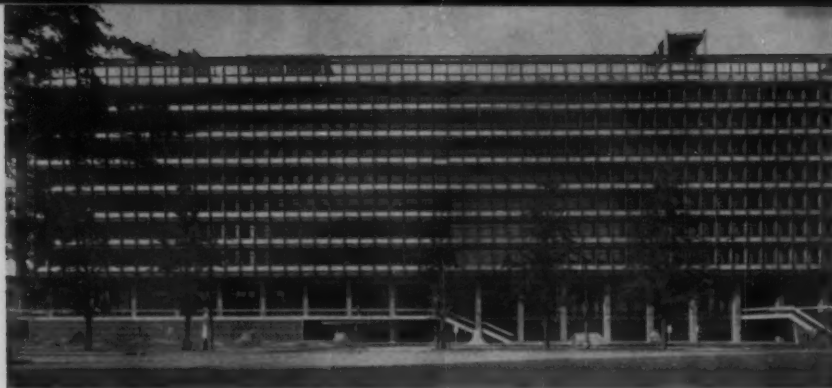
"We contemporary architects have steel and concrete and other new materials. These materials have more and more potentiality and possibilities compared with wood and stone. So we contemporary architects are most fortunate people in history. We can do anything we want. But unfortunately, we have not found the real expression of steel or concrete except in very few cases. Steel and concrete cannot move us like the Greek or Medieval stonework." TANGE



The traditional Japanese wooden structural cage with its precise module is suggested by the articulated reinforced concrete skeleton of this building. The problem Tange sets himself of finding a real expression of steel or concrete is implicit here. If this is one of the few cases where a true expression of concrete has been found, its resemblance in proportion and detail to the wooden structures of the past implies the continuing relevance of the Japanese tradition.







"We contemporary architects must dig out or have to dig out the very expression or essentials of such human vitality so hidden in the techniques and materials." TANGE

This building was designed in 1952 as the headquarters of the Tokyo metropolitan government and completed in 1957. Each floor is cantilevered beyond the glass area and divided by a series of screens creating many small balconies. Tange's solution of the contemporary problem of shading large glass areas creates a strong pattern of light and shadow not found in Japanese traditional architecture which usually depends for surface effect on flat surfaces broken by simple linear patterns.

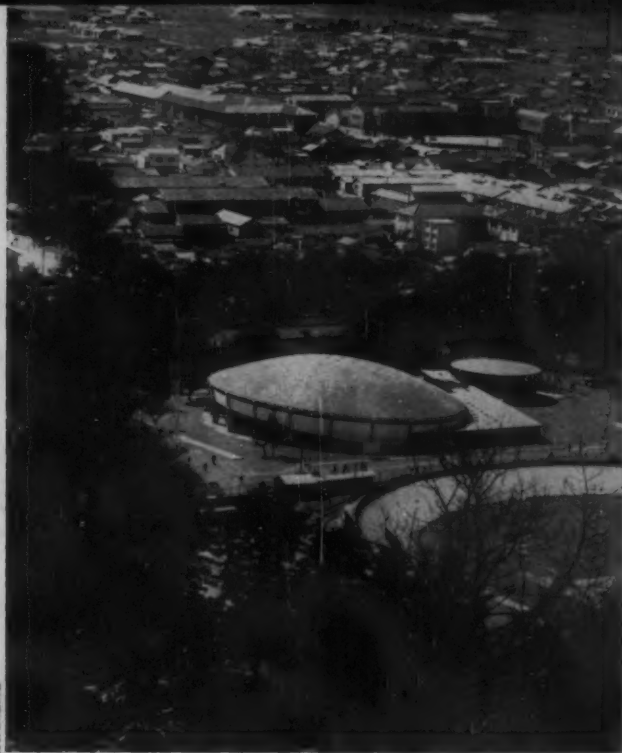


Kenzo Tange

Tokyo Metropolitan City Hall



Kenzo Tange



Ehime Convention Hall



Built in Matsuyama Ehime, this space is used as a gymnasium, auditorium and concert hall with a fixed seating capacity of 1400. Due to the low labor cost in Japan, the shell construction used was more economical than a steel framed dome or vault. The first shell construction in Japan on such a large scale (its diameter is 165 ft), it required special structural provision for earthquakes. The joints between the shell and the columns were not fixed during construction, to prevent cracking at the moment when the form of the shell was removed and the great tension stress of the dome ring was transmitted to the supporting columns.

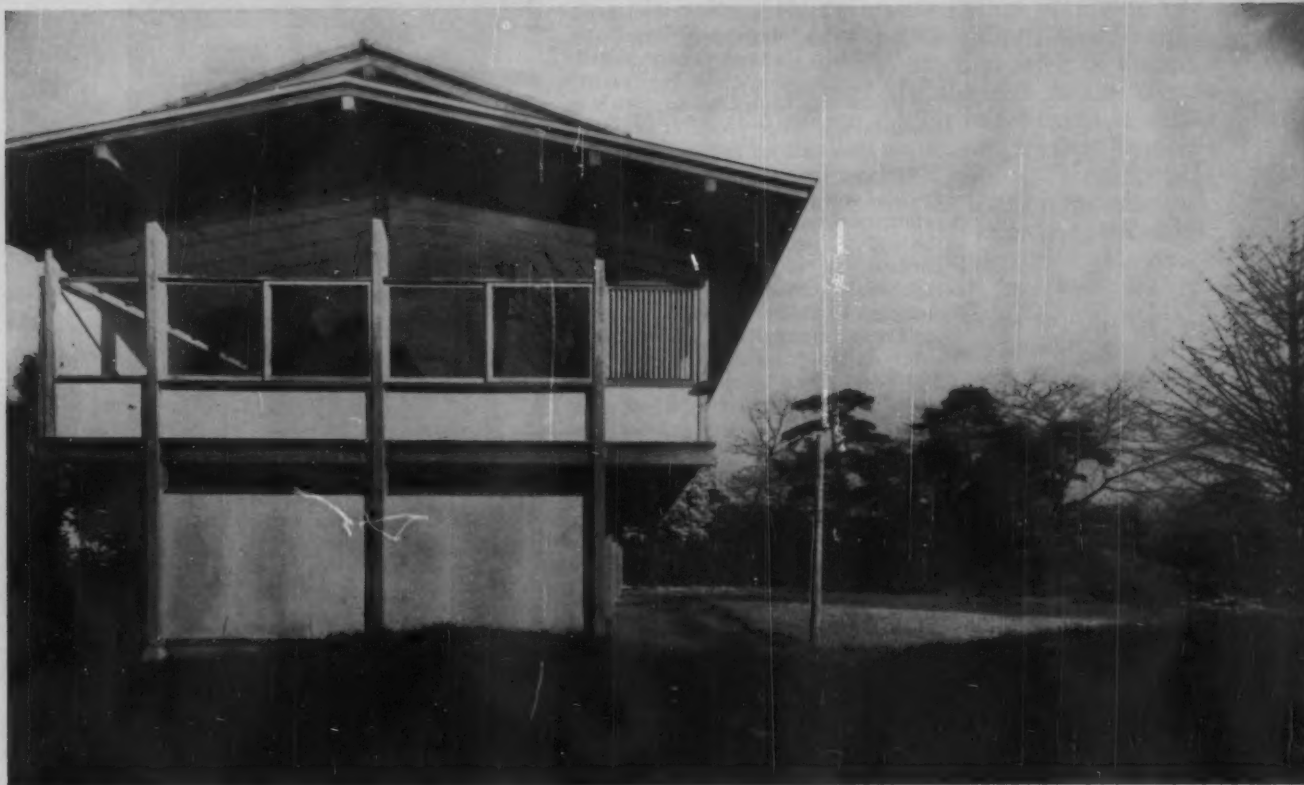


A House

"Contemporary architecture might be real reflection or expression of a natural climate condition and social structure and techniques." TANGE



Hiroshima



Kenzo Tange



A House

In his own dwelling Tange's materials are traditional, his method modern. His high floor raised on pilotis can be compared to the floors of traditional houses which were raised off the ground because the Japanese, having never developed furniture, sat on them. Planned around a utility core, a spacious and flexible living space has been created which is essentially a large room. It is partitioned into smaller rooms by the use of the two types of Japanese screens on light wood frames; those of translucent rice paper known as *shoji* and the heavy opaque paper type called *fusuma*. In combination with the rice straw mats called *tatami* these elements establish a traditional module for the house. Tradition has been subtly altered however. The usual Japanese room is perfect for the static and contemplative life but is not suited for the active modern life. When one rises from the *tatami*, the room loses its exquisite balance, and one feels oppressed by the dark ceiling and the general cramped atmosphere of the space. In order to create more active space a new module is adopted in this room, and the *ramma* or space between the lintel and the ceiling is all glass to lighten the ceiling.



Shyu Murai



Scherman

Rollie McKenna

Scherman

Berko



The Seagram Building at 375 Park Avenue is Ludwig Mies van der Rohe's first building in New York City. It is also his first large building in the United States to be executed with the fine materials and craftsmanship characteristic of his European work. But nothing about the building itself is more independent of commercial considerations than the generous use of the land on which it stands. That so great a departure from the commercial norm could happen at all is due to something besides the prestige of Mies van der Rohe. It is the product of collaboration between Samuel Bronfman, Chairman of the Board of Joseph Seagram and Sons; his daughter, Mrs. Phyllis Lambert; Mies; and Philip Johnson.

Intending to commission what would be regarded as an important building, Mr. Bronfman was persuaded by his daughter to accept the role of patron of architecture rather than client, a distinction which has practical consequences. That distinction has in fact guided this presentation of the building. Making no effort at all to claim this or that on functional or economic grounds, Mr. Drexler proceeds directly to describe Mies' approach as a creative artist working for a patron.—EDITORS

THE SEAGRAM BUILDING

by Arthur Drexler

ARCHITECTS: *Mies van der Rohe and Philip Johnson*

DIRECTOR OF PLANNING: *Mrs. Phyllis B. Lambert*

ASSOCIATE ARCHITECTS: *Kahn and Jacobs*

CONTRACTOR: *George A. Fuller Company*

MECHANICAL ENGINEERS: *Jaros, Baum and Bolles*

STRUCTURAL ENGINEERS: *Severud-Elstad Krueger*

ELECTRICAL ENGINEER: *Clifton E. Smith*

LIGHTING CONSULTANT: *Richard Kelly*

LANDSCAPE ARCHITECTURAL CONSULTANTS:

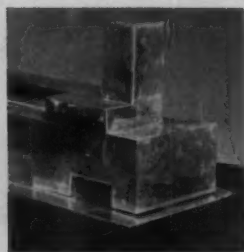
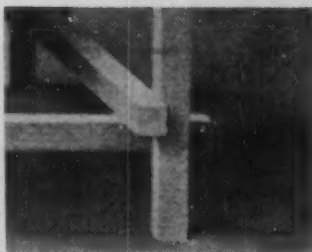
Charles Middleeer and Karl Linn

ACOUSTICAL CONSULTANTS: *Bolt-Beraneck and Newman*

GRAPHIC CONSULTANT: *Elaine Lustig*

Like all of Mies van der Rohe's buildings the Seagram tower ought to be appraised as a work of art. This is worth emphasizing because of Mies' avowed concern for *Baukunst*—the craft of good building—as distinguished from the invention of abstract forms for which systematic and appropriate structure must be found (as for example Frank Lloyd Wright's Guggenheim Museum). Much of Mies' influence derives from the relative ease with which architecture as a disciplined craft, a skill, can be taught and practiced. With more success than any of his peers Mies has produced a school, but even the best of teachers may not altogether succeed in conveying to his students the exact nature of the logic by which he proceeds. There is still, of course, much intuitive Art in Mies' *Baukunst*. It is in fact central to his work, since it leads him to judgements and decisions which cannot be understood by logic alone. The massing of the Seagram building illustrates the point.

The aesthetic system supporting Mies' conception



2



4



5



6



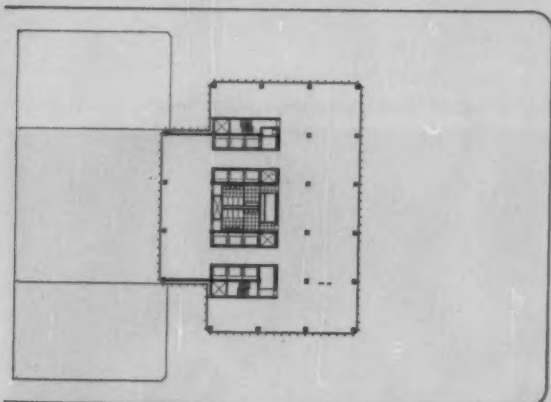
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of space, much the way a modified Cubism supported Le Corbusier's, was proposed by a group of artists working in Holland from 1917 to around 1928. With primary colors, clearly separated rectangular units, and asymmetrical balance substituted for traditional methods of axial composition, *de Stijl* artists sought to create a universally applicable theory of the arts. The intersection of supporting elements in a chair designed by Gerrit Rietveld in 1919 (1) and a detail from one of Georges Vantongerloo's 1928 architectural sculptures called "Aeroports" (2) are more closely related to Mies' work, if less well known, than are the paintings of Mondrian.

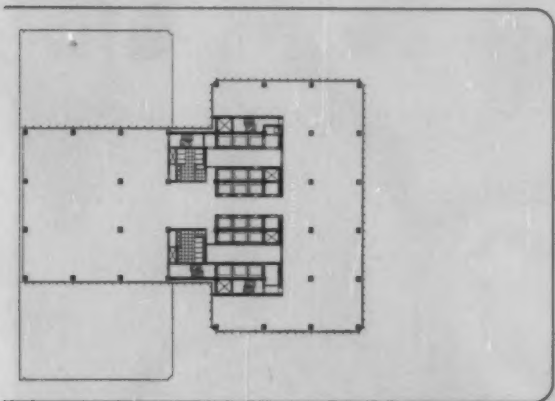
Since the war Mies has been concerned primarily with the articulation of structure, largely eschewing the pleasures of modulated space and light. The renunciation is all the more curious because he himself contributed so importantly to the development of the open, freely composed plan. Nevertheless, *de Stijl* esthetics still contribute to his buildings. The massing of Vantongerloo's sculpture in particular offers an equivalent to the projecting spine and flanking rear wings of the Seagram tower (3, 4, 5, 6). But the building differs from it in one obvious respect: it is bi-laterally symmetrical. In fact the Seagram building is the only skyscraper in New York to be so organized while at the same time maintaining distinctly different front, back, and sides. The United Nations Secretariat, no less than Lever House or the R.C.A. building, faces two directions at once. Seagram's, no matter from which side it is approached, quite clearly faces one way. Like McKim, Mead and White's 1918 Racquet Club opposite, the Seagram tower is classically and hierarchically composed.

Five bays wide and three deep, the building stands on a pink granite podium bound on its sides by massive green marble parapets. Two pools and two groves of weeping beech trees emphasize its separateness from the street. Dark against the sky, walls of amber-gray glass and, on the sides of the projecting spine, gray-green marble are held in a net of dull brown bronze. Rubbed occasionally with oil, the bronze mullions, columns, and spandrels will age to a still darker, richer color. At each floor luminous ceilings (not yet entirely equipped with their diffusing panels) are kept lighted night and day. Beautiful as this controlled illumination appears at night, the effect is perhaps at its best when on certain late afternoons the glass walls glow softly. In the offices this lighting counteracts the brightest glare, and has the curious effect of making New York City seem like a photographic mural mounted on the other side of the glass.

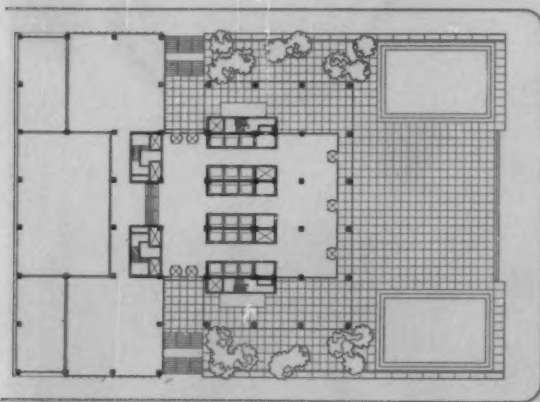
Like Lever House diagonally opposite (Seagram's predecessor in New York in the intelligent use of land) the building's window module derives from—but is not altogether determined by—the most convenient dimensions for individual offices. It is this all too human scale that leads directly to the monotony architectural humanists deplore, and it is Mies' effort to overcome this monotony by making the whole more than the sum of its parts which explains, perhaps more fully than structural logic alone, the enormous impact of the bronze mullions sweeping from top to bottom in unbroken lines.



Plan at tower level

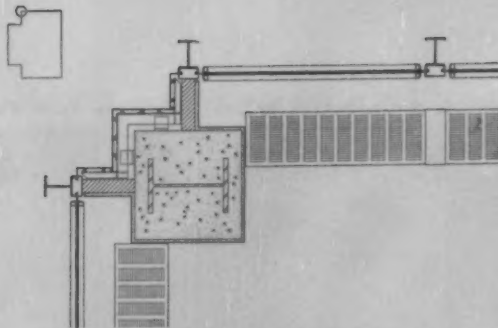
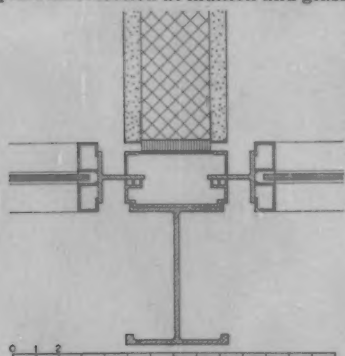


Plan at intermediate level

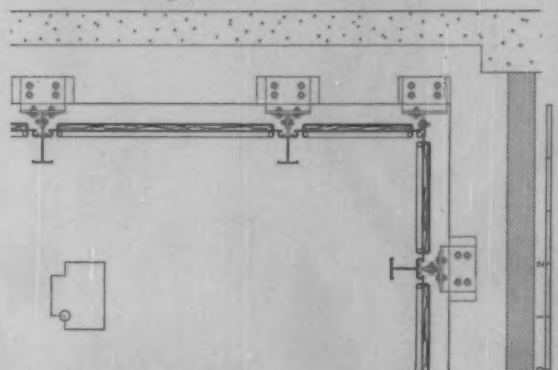


Plan at plaza level

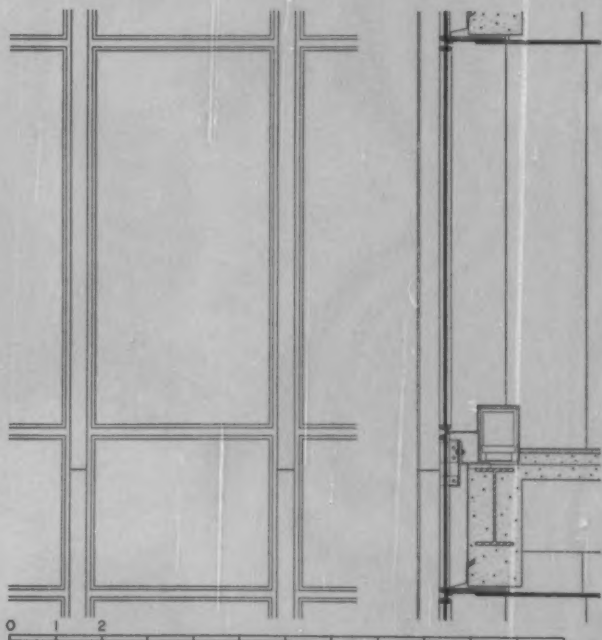
Typical intersection at mullion and glass



Above: outside corner detail. Glass is glare reducing pink which appears without color from inside. Bronze mullions were extruded from $7\frac{1}{2}$ in. diameter tubes which are $2\frac{1}{2}$ in. larger than the former maximum diameter available. Bronze covering columns was fabricated in long narrow extrusions fitted together. Extrusions were used because they wave less than plates.



Above: Inside corner detail showing serpentine marble facing. Solid concrete wall is part of wind bracing system. Below: elevation and section of window and spandrel. The section shows the special low profile, high pressure, high velocity air-induction units used on the periphery of the building. They are recessed in the floor construction to achieve an even lower profile.



Seagram tower, flanked by low rear wings, faces Park Avenue. Plaza is raised above street level



Tower front echoes axial symmetry of McKim, Mead and White's Racquet Club on the opposite side of Park Avenue



Plaza pools and fountains will eventually be ornamented with sculpture

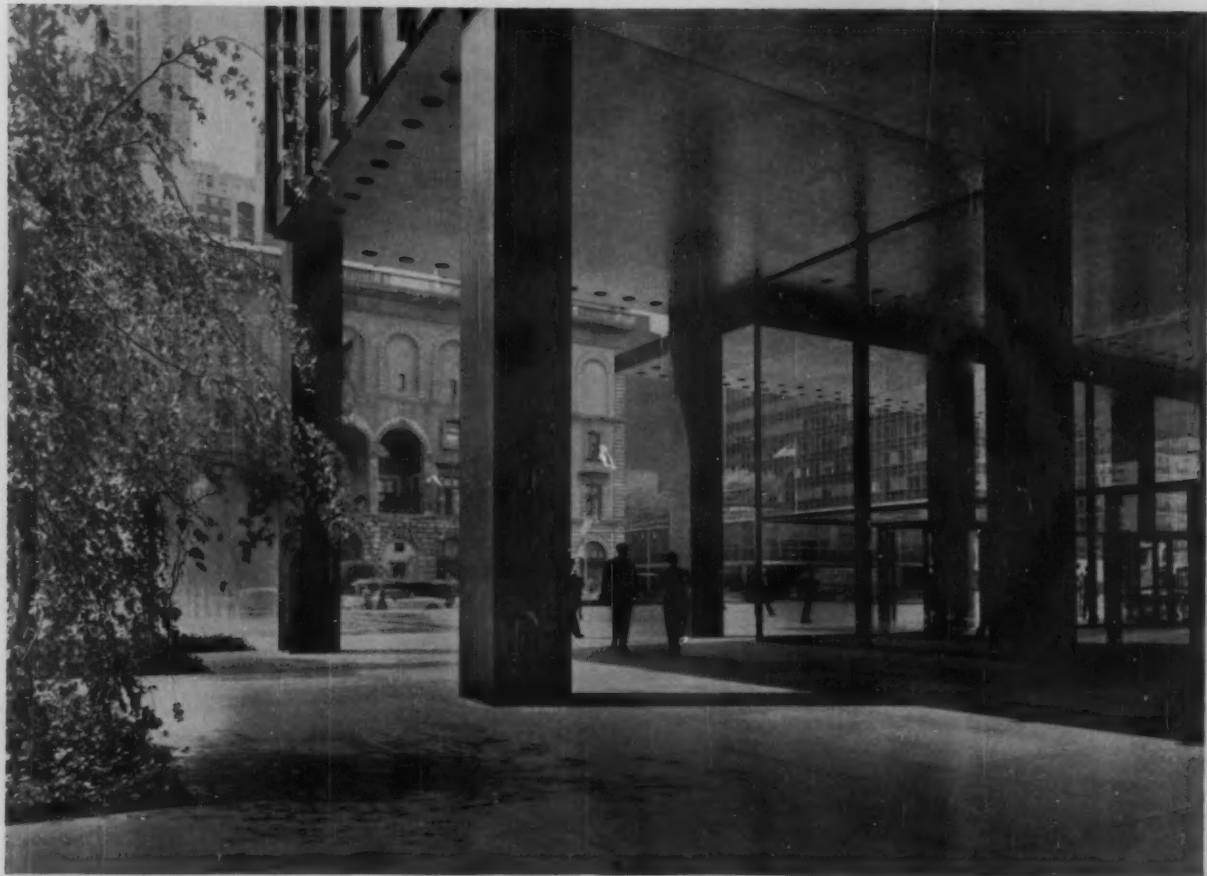


© Ezra Stoller

Identical side entrances open on through gallery beneath the building's projecting spine



Top: bronze columned portico of tower. Soffit is of gray-brown glass mosaic. Bottom: lobby. Stone furniture to be added



Rollie McKenna

Top: reception room for Seagram offices. Bottom: Seagram executive office. Furniture by Mies van der Rohe

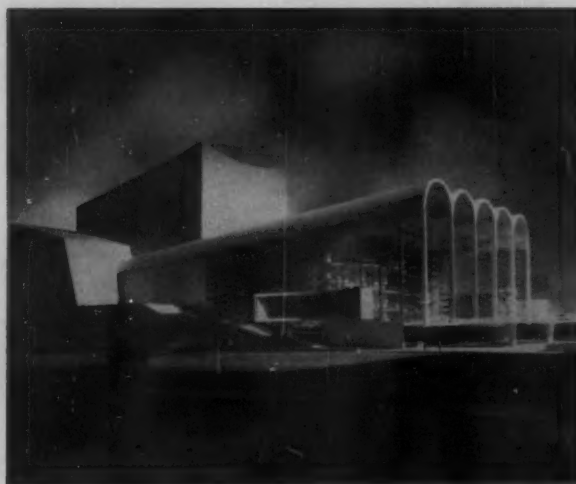


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Four Current Projects in the News

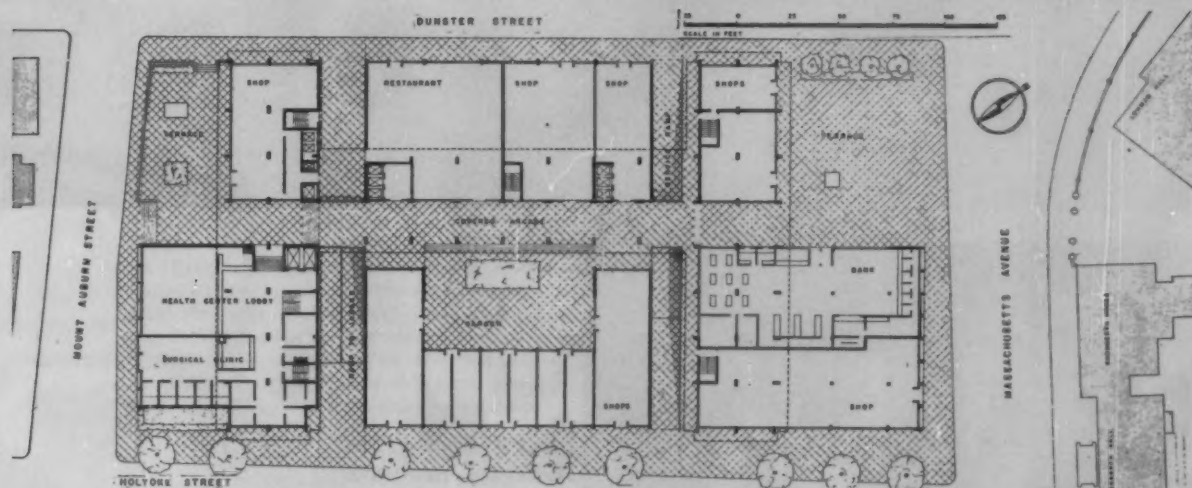
Plans have been approved for Salem, Oregon's, capitol mall. The architects, Wilmsen and Endicott, of Eugene, Ore., have not only provided urgently needed office space for the state labor and industries board and the supreme court offices, but have solved the parking problem in an ingenious way. They have raised the upper surface of the mall four feet, and lowered the area beneath by enough to provide a covered parking area. The upper surface is pierced at intervals by circular holes which give access by ramp to parking below, and make possible natural lighting in the parking area and fountains at the mall surface. Francis Keally, of New York, who designed the capitol building in 1939, Herman Brookman, F.A.I.A., of Portland, and Lloyd Bond, Eugene landscape architect, were consultants on the project



Harrison and Abramovitz are the co-ordinating architects for New York's \$75,000,000 Lincoln Square Center for the Performing Arts. The three-and-a-half-block Center is dominated by Harrison and Abramovitz's Metropolitan Opera House (see model at left), the largest building in the complex, as well as one of the largest opera houses in the world. In the overall view below, the Met is flanked by Philip Johnson's Dance Theater, and Harrison and Abramovitz's concert hall. Behind the opera house, from left to right, are Pietro Belluschi's Juilliard School of Music, a dormitory for Juilliard students, the Library-Museum of the Performing Arts, and a public restaurant. Commissions for the last four buildings have not been awarded yet

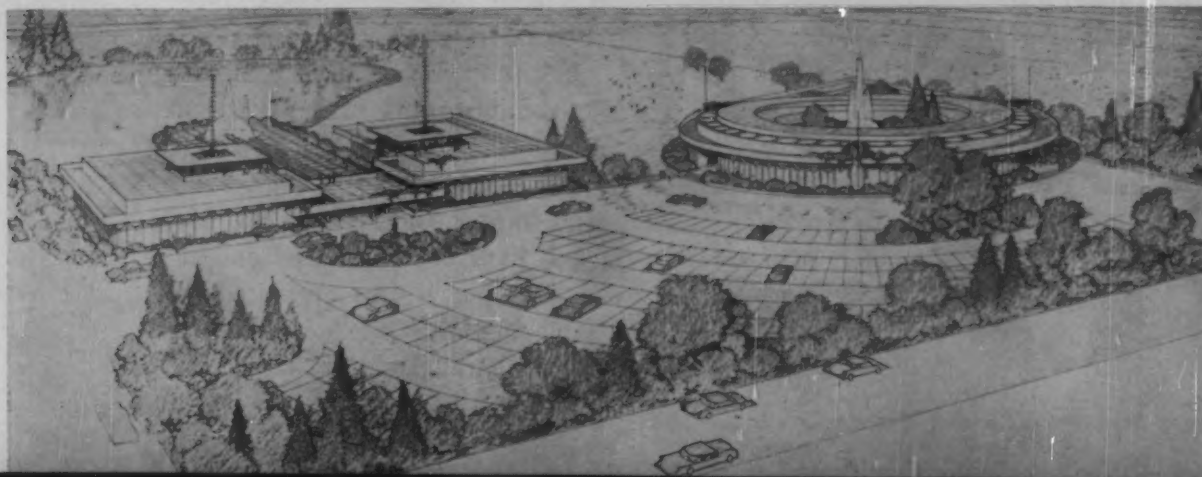


José Luis Sert's \$9,000,000 Harvard Square development in Cambridge, Mass., connects two existing parts of the Harvard University Campus: Harvard Yard and the Harvard houses. Open promenades on either side of the block-square complex, and an arcade down the middle, allow pedestrians to walk uninterruptedly from the Houses to the Yard, and provide a visual axis between them, tying them together. Shops, restaurants, a bank, and a new health center for Harvard and Radcliffe College, are included in the plan. The ten-story health center (photo at right) will be the first building constructed when the project gets under way. The bottom five floors will be devoted to medical facilities and offices, and the top five to general office space



Frank Lloyd Wright is designing a "juvenile cultural center" for the University of Wichita's College of Education. The center consists of two buildings, as shown below. At the left is an administration and classroom building for the College of Education, and at the right is an experimental elementary school. The university expects to begin construction in from one to three years. Mr.

Wright said of the project: "For too long a time, Education has subscribed to the standard brands (Gothic for instance) or to the sophistications of the Paris Beaux Arts. . . . Therefore it is the more timely and encouraging the Middle West Wichita has made this world-notable subscription to what can, without equivocation, be called 'American Architecture' "



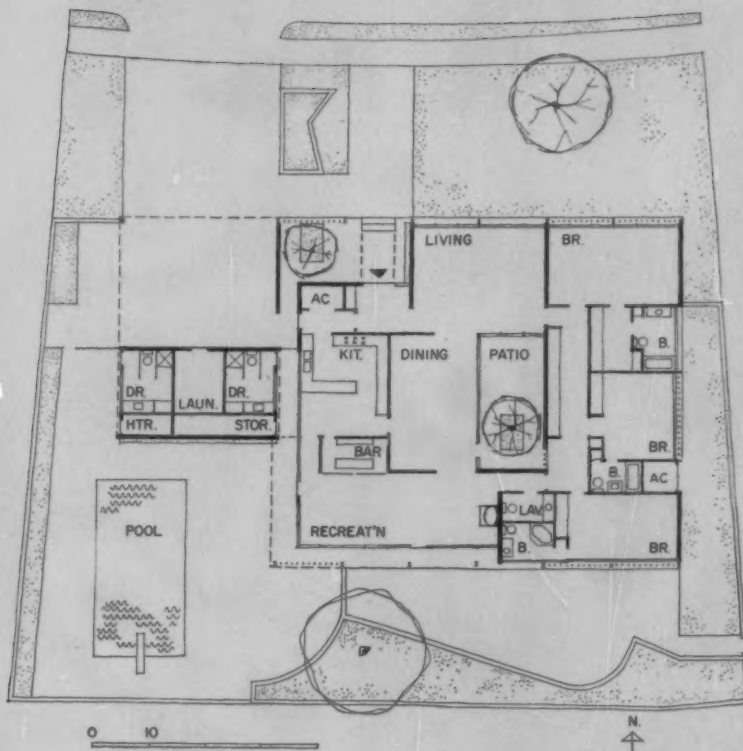


Frank Lloyd Miller

1 for Mr. & Mrs. Louis J. Roussel, New Orleans, La.
August Perez & Associates, Architects.
A. W. Thompson & Associates, Structural Engineers; Schroeder & Associates, Electrical Engineers; Jones Brothers, Contractor.

FOUR "INDOOR- OUTDOOR" HOUSES

With the rash of poll-taking and opinion-sounding these days on what the public wants in its ideal house, it is interesting occasionally to reflect on how many of the items have been incorporated into the houses they're getting—and what the houses look like. Most of the ideas proposed have been discussed one at a time by the press. The four houses presented here combine a remarkable number of the more lauded of these features, show a job well done.

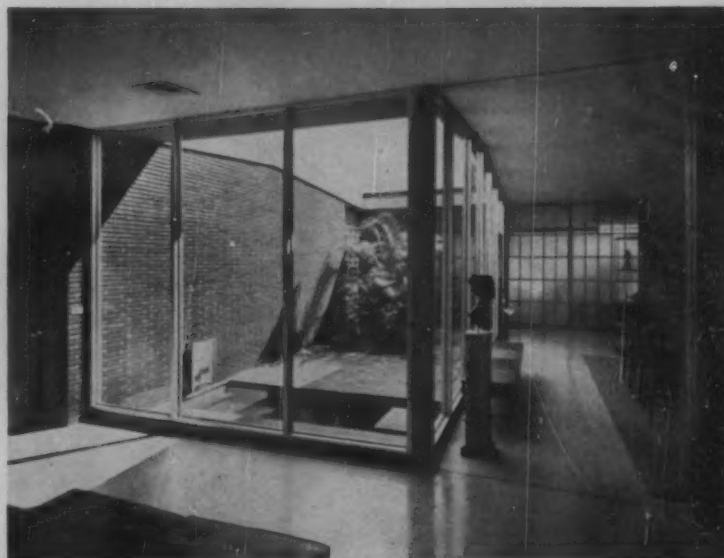


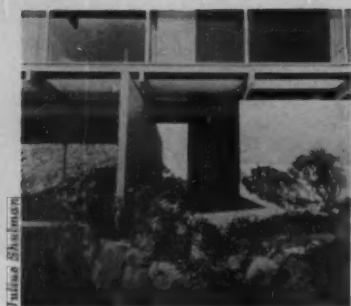
OUTDOOR LIVING areas provide extra activity "rooms" for this New Orleans lakefront house. The house covers all land allowed by local codes. The rest of the plot is allotted to fenced-in lounge, recreation and swimming areas, a motor court, and a small front lawn. The entrance court has an alleyway connecting directly with the rear yard. The plan centers on an open slate-paved patio, with a fish pond and fountain by Jack Hastings. The patio is used for outdoor sitting on windy days, gives all rooms a close connection with outdoors.

EXTERIOR cast stone grills give privacy and security to all bedrooms. The house faces the lake to the north, and a glass façade was desired for the view. The frame is steel, floors concrete slab and terrazzo. Exteriors are brick, aluminum-framed glass. Roof is built-up composition. The bedroom hall has plastic skylights.



INDOOR LIVING areas are very flexible. Sliding screen walls permit living, dining and play areas to be used separately or in combination. Three bedrooms, each with bath, are zoned apart. Each zone has separate heating-cooling system. Interior walls are brick, plaster, plywood; ceilings are plaster, follow slight pitch of the roof. Kitchen is located to serve all living areas. Interior decoration is by Frank Quintini.

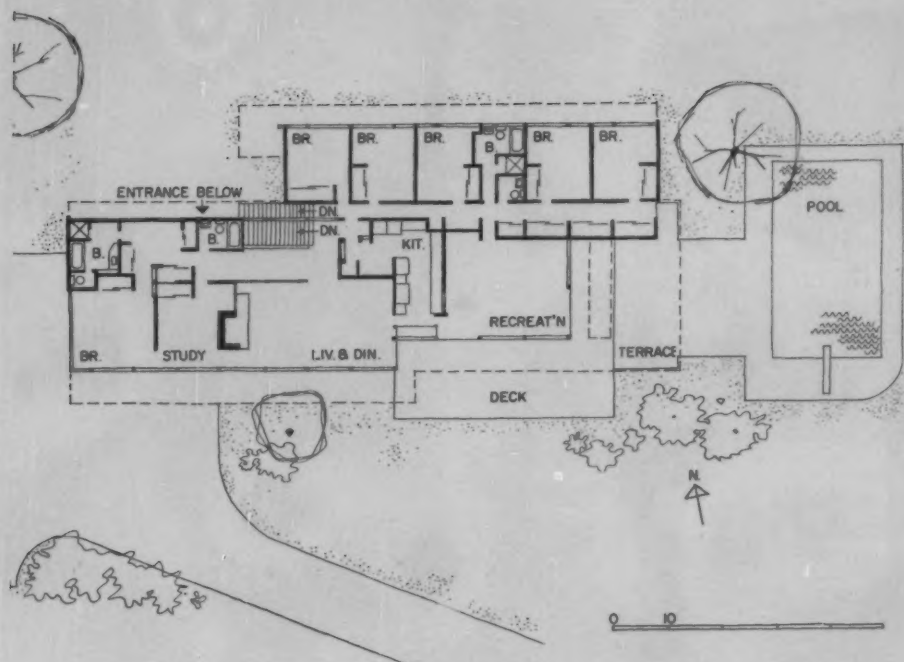




2 for Mr. & Mrs. Frederick Slavin, Santa Barbara, Calif.
 Richard J. Neutra, Architect.
 Collaborators: Benno Fischer, Serge Koschin, John Blanton.
 Fred M. Reid and Son, Contractor.

FOUR "INDOOR- OUTDOOR" HOUSES

More living space, real and apparent, has probably been the most sought after feature. "Indoor-outdoor living" is wanted, with the attendant sliding glass walls, and development of the plot into terraces, courts, and activity areas. Inside, open planning has much favor, often with partial partitions and "penetration of spaces" to augment it. Focus is decidedly on views, and extension of walls and roofs to help link inside and outside. Wide use of indoor gardens, plants and central courts further accents this. People also want at least three bedrooms, space for two cars.



OUTDOOR LIVING is made an integral part of this house in spite of the steepness of the foothill site. A cantilevered deck supplements terrace and pool areas to extend the living rooms. The house is a one level scheme, with only the auto court, entrance and utility room below. An outer and inner double stairway, separated by plate glass leads to the main floor. There is a tremendous view of Santa Barbara and a mountain range; glass walls make the most of it. The bedroom hall has a direct entrance to the terrace and pool area. There are continuous fluorescent light troughs at eaves and stairs. Jocelyn Domela was Landscape Architect.

EXTERIOR roof projections shade the broad glass front of the house. As in much of Neutra's work, it is constructed with exposed structural beams, spaced to permit a roof diaphragm of two-inch planks. The frame is wood and steel posts, steel beams through carport. Exterior walls are plaster, tongue-and-groove siding.



INDOOR LIVING is zoned by kitchen into two main areas: a "children's area" of bedrooms and recreation room; an "adult area" of bedroom, study, formal living and dining area. All living areas can be used together, with children's bedrooms shut off for quiet. Interior walls are plaster, birch plywood; floors are asphalt tile, carpet over wood frame.





Julius Shulman

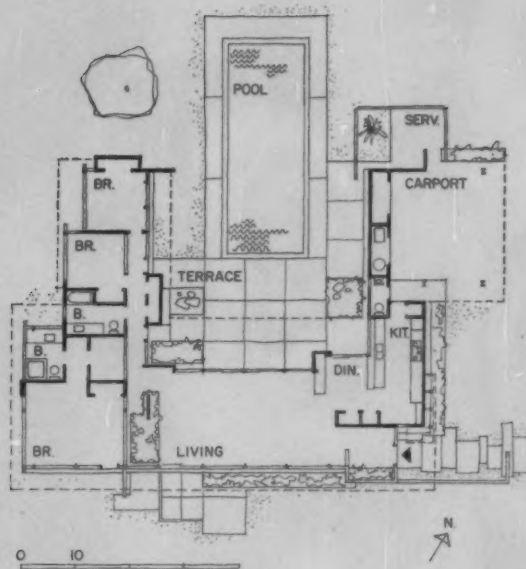
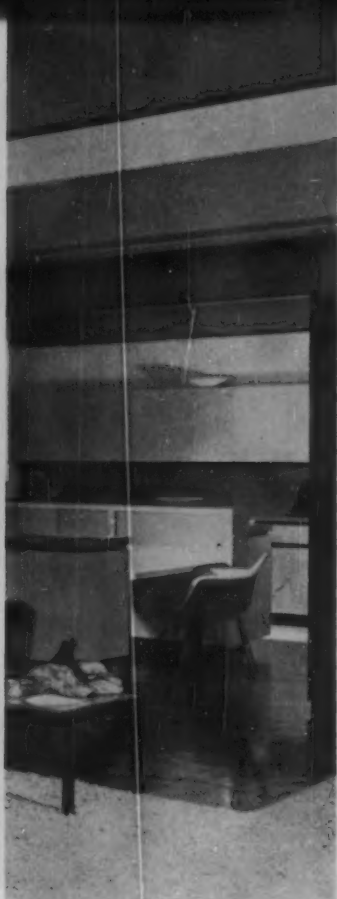


3

for Mr. & Mrs. Stephen Nordlinger, West Los Angeles, Calif.
A. Quincy Jones & Frederick E. Emmons & Associates,
Architects.
Elwood Houseman & Sons, Contractor.

FOUR "INDOOR- OUTDOOR" HOUSES

Convenience, comfort—even luxury—are also much in demand. The favored scheme is a long, low, one-floor plan, preferably with a swimming pool. It also has a minimum of two baths, a powder room, master dressing room, a kitchen with built-in equipment, automatic laundry, and zoned heating and air conditioning. Separate service entrance and foyer are wanted, along with a bar, and a fireplace in the living area. Increased interest is centering on sound insulation for sleeping areas, easy maintenance, and on more ornament, color and storage.



OUTDOOR LIVING around the pool forms the core of this U-shaped, moderate-cost house. It is built on a level, hilltop site overlooking city and ocean to the south, mountains to the north. The house exploits these assets, while the west wall is solid to shield against late afternoon sun. The landscape design, also by Jones & Emmons, provides at least a trickle of paving to extend the floor of each glass-walled room to the outside. There is a little entry garden, shielded service yard.

EXTERIOR roof edges are "turned down" to shade living area window wall. The house is designed around a steel skeleton. On ceilings, plaster is applied over wood joists; plaster on walls is over metal channels, giving a panel effect. Other walls are redwood siding. All floors are concrete slab.



INDOOR LIVING areas concentrate on one big space for informal life and buffet-style entertaining by parents and two college-age children. The master bedroom suite provides a retreat for the parents. A little indoor garden replaces a fire-place as living room focal point. Partial partitions emphasize spaciousness. Interiors by Harry Saunders.





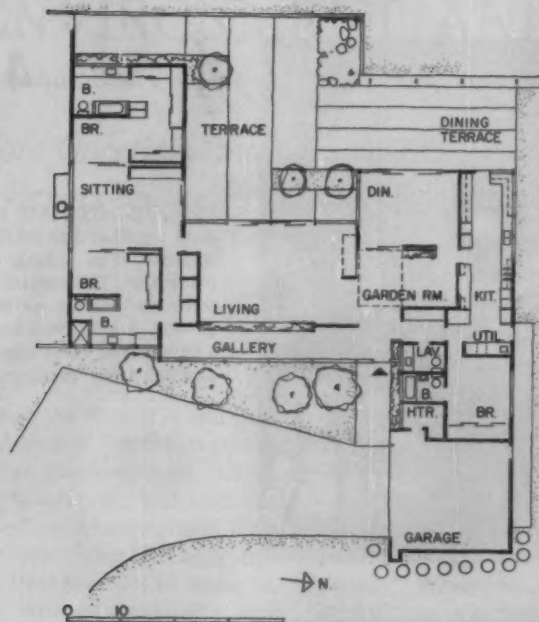
Julius Shulman



4 for Mr. & Mrs. M. R. Schacker, Beverly Hills, Calif.
 Rex Lotery, Architect.
 Richard E. Lowe, Engineer. John Silver, Contractor.

FOUR "INDOOR- OUTDOOR" HOUSES

Flexibility has, of course, been the other big device extolled for its better use of space. This has pointed interest to post and beam structures and movable partitions of various sorts. The possible use of inside baths and skylights has also freed thinking some. The typical concept is often a more-or-less loose layout within a simple and regular structure. Along with all this is the demand for more privacy, for zoning of various activities, good circulation, and for a couple of places to dine as well as two separate sitting or living areas. A formal dining area is often wanted.



OUTDOOR LIVING spaces were explicitly planned here to add space for more formal entertaining on a large scale. The owners, a middle-aged couple living alone, wanted a variety of spaces, inside and out, adaptable for very small groups or big gatherings. Thus all living areas join together, can be used separately. A central skylighted garden room is planted with foliage and serves a variety of functions: card or bar room, breakfast and dining room for the owners. Chuck Ito did the landscape design.

EXTERIOR stress is placed on the glass-walled gallery, emphasizing the entrance. Construction is wood frame, with concrete slab floor, stone and vertical cedar siding on the exterior. Floors are finished in terrazzo or carpeted. There are two forced-air furnaces, with a perimeter duct system.



INDOOR LIVING is divided into two distinct areas: the major living rooms, and the bedroom-sitting room wing. The latter provides a room to relax in or entertain a few guests. The scheme has considerable flexibility. Interior design is by Guy Moore.





4 *The Schacker House*

INDOOR-OUTDOOR DINING areas can be used together for really big dinners in fine weather. The outside area is covered for protection. The central garden room adjoins these and serves as dining space for tiny groups. A long, well equipped kitchen serves any or all of these areas with equal facility, and has a bar opening into the garden room.



BATHROOMS and dressing areas are at each end of the master bedroom wing. They are compartmented, and rather luxuriously fitted with marble counters and splash panels, walnut plywood cabinets, built-in oval-shaped lavatories.



Julius Shulman

MASTER BEDROOM SUITE doubles as an intimate living room or luxurious sleeping quarters. The two bedroom alcoves can be closed off from the central sitting room by sliding doors for privacy. The dressing areas are open to the alcoves, but placed out of sight of the sitting space. The latter has a fireplace, built-in television and High-fidelity.



"ENVIRONMENT AND INDUSTRY"

More Questions than Answers: A Report on the Princeton Conference

By Charles Moore

Princeton University sponsored, on March 4 and 5, a meeting of the Princeton University Conference concerned with "Environment for Business and Industry." Organized by architect Robert W. McLaughlin, director of the Princeton School of Architecture, with the late John Knox Shear, editor of the *RECORD*, and David Scribner of Joseph P. Day and Co. in order to bring together the points of view of architects and of business and industry, the meeting took its cue from Abraham Lincoln: "If we could first know where we are, and whither we are tending, we could then better judge what to do, and how to do it."

Accordingly a group of leaders in business and in industry presented their points of view about where we and our physical environment are, and about whither it and we are tending. Frazar B. Wilde, president of the Connecticut General Life Insurance Company, affirmed the desirability of "The Move to the Suburbs," while Adolph W. Schmidt of T. Mellon and Sons used the example of Pittsburgh to make the case for "The Redevelopment of the Central City." S. Westcott Toole, of the Prudential Insurance Company, also made "The Case for the Downtown Area." Laurence C. Plowman of Textron, Inc. discussed the "Shifting Locations of Industry in the United States," and David Scribner, of Joseph P. Day, Inc. described the "Economic Analysis" of these locations.

A statement from the floor during the last session of the conference described what may have been a general reaction: "It seems to me that . . . the assumption has been that we're all supposed to take sides . . . and I'm not going to take sides." Much more than in developing any partisanship for or against a move of business from a city to its suburbs, the effect of the conference was to suggest a civilization moving around so fast that even notions like "prosperity" and "recession" were left behind along the road. Mr. Toole mentioned the provision of a swimming pool in Prudential's new Houston office building to attract employees to the building's prestige location, while Mr. Plowman and Solomon Barkin, who represented the Textile Workers' Union, were describing some answers, and looking for more answers, to the acute problems of human needs in New England, where the removal of textile mills has

created an army of thousands of "displaced persons."

"Since the wheel was invented," Mr. Plowman said, "thereby creating not only a major industry (the manufacture of conveyances) but making possible the movement of all industry on the wheels thus provided—the world's industry has been on the march." Where we are, in Mr. Lincoln's terms, seems subject to varying interpretations, and analyses of whither we are tending are various enough even to discourage sidetaking. The one thing clear is that changes are taking place with dazzling speed. "I think," the voice from the floor continued, after announcing his refusal to take sides in the city vs. suburb division, "the pattern of the future is like Los Angeles, which John Burchard has described as seven suburbs in search of a city, and we're not going to have the central city as we now conceive it and we're certainly not going to have the suburban-type thing. We're going to have an entirely new complex of living and industry and it seems to me the people who are most versed in these matters ought to be studying what we're going to have to deal with twenty years from now in terms of rapid transit, in terms of new governmental machinery and our financial base on this much broader complex. . . . I think we ought to look for the new pattern."

The question had been raised at other points in the conference: who is equipped to look for the new pattern, to synthesize the vast array of statistics, errant facts, and high speed trends? It had been asked to members of a panel of Princeton representatives, made up of R. L. Johnstone, Professors Jean Labatut of the School of Architecture, Richard A. Lester of the Economics Department, John Sly of the Politics Department, and Harold Stein, of the Woodrow Wilson School. Their answers, and some statements that had gone before, would have made frightening listening to anyone who had supposed that the great scale of contemporary projects was part of an overall plan. "After twelve years of intensive effort and a few dramatic results, it is quite clear to many of us who have been close to this situation that we have only scratched the surface," Mr. Schmidt had reported about the Pittsburgh development. "There is still no overall plan for the Golden Triangle [after all that famous development!] to determine its highest and

best land use and suggest its best future development. Although we know that 90 per cent of the population boom will settle in the suburbs and the periphery . . . we have done no broad regional planning to prevent encroachment upon strategic land areas. We have not been able to solve our mass transit problem."

AUTHORITIES

Various phases of the Pittsburgh redevelopment were accomplished by five semi-public authorities; the Urban Redevelopment Authority of Pittsburgh, the Public Parking Authority, the Public Auditorium Authority, the Allegheny County Sanitary Authority, and the Tunnel Authority. Three privately supported civic agencies played the dominant role in the Pittsburgh redevelopment: "In my own mind," Mr. Schmidt explained, "I have always regarded the Pittsburgh Regional Planning Association as the left bower, and the Pennsylvania Economy League as the right bower of the Allegheny Conference on Community Development, the action and coordinating agency. The Planning Association makes the plans, the Economy League asks where is the money coming from, and the Conference puts the plans into action, by acting as initiator, trouble shooter, coordinator, catalyst. . . . The work of the Conference is performed by eight officers and twelve members constituting the executive committee," on which are represented one of the chief officers of the U. S. Steel Corporation, the Gulf Oil Corporation, Westinghouse Electric Corporation, Pittsburgh Plate Glass Company, H. J. Heinz Company, the Aluminum Company of America, smaller companies and banks.

The weaknesses in overall planning which are evidently inherent in this complex of separate authorities were cause for concern in a variety of connections. Mr. Barkin, concerned with the people displaced by the disappearance of textile mills from New England, pointed out that we do not have institutions devoted to the problems of planning, and that we need desperately an analysis of communities that have lost their locational advantages. John Diehl reported, after a film supplied by architects Benacerraf and Guinand of Caracas, who were unable to be present, that U. S. Steel's successes in the development of the Orinoco Valley of Venezuela were not paralleled in the Delaware Valley, where much more complex situations existed, because no implements were available for synthesis; the ability to coordinate the separate parts of the complex situation was missing. Professor Sly took up this need for synthesis. There is, for instance, he pointed out, no unit equipped to study the New York region, to synthesize other studies, and to focus them on one problem. The problem is not to *do* research, but to *take* research, and coordinate it so that it becomes useful. This might well be the task of a university.

Professor Stein had discussed the huge number of

governments in the United States, and the importance of politics as a solution to the problems which exist. This brought up the inability of a jig-saw puzzle of governmental units to engage in overall planning, and the consequent need to set up separate authorities, which overlap governmental units, but which leave in turn great uncoordinated areas between themselves. The problem of traffic, mass transportation, and parking, for instance, was raised by Kenneth Kassler. "I don't think," Professor Sly answered, "that there's any solution to this problem . . . unless we get a balanced transportation system." If we are dealing only with automobiles, he went on, we can never catch up; and while we are losing this race, rapid transit facilities are vanishing because they don't pay their way.

The very structure of most authority systems, which set up an autonomous unit to create highways, while other transportation languishes, has contributed to the gravity of the problem. "A few years ago," Joseph E. McLean, Commissioner of the New Jersey State Department of Conservation and Economic Development, had said at dinner, "we could afford the luxury both of the uncoordinated growth and of the uncoordinated attack on the problem. Today, we must coordinate all of our resources so that the major mission of each agency or department is made compatible with the major missions of other departments. For example, a modern highway is not just a means of transportation, it may also be a means of eliminating a slum [or of causing one, as Lewis Mumford noted in the April RECORD]—hence, the highway engineers must see the challenge of eliminating blight and of substituting something constructive."

Mr. Scribner asked if the example of Toronto Metropolitan, which is a government able to institute a planned and coordinated program for the entire Toronto metropolitan area, was not one to look to in our dilemma. Professor Sly thought not: "We don't do that in this country . . . we fall back on authorities." Questioned whether the county government could be useful to combat metropolitan problems, again Professor Sly thought not, however useful the county remains in rural areas. Can other cities bestir themselves, a voice from the floor asked Mr. Schmidt, as Pittsburgh has begun to do? The cities "have to get really bad before people will do something about it," Mr. Schmidt had to say.

ECONOMIC ANALYSIS

But if the body politic can afford for a while the wastes which result from lack of planning, business generally cannot. As David Scribner reported, "Ben Franklin once said that two moves for a business were worse than a fire. Today the industrial situation is in just that position. If we look through the shotgun marriages of industry, called 'mergers,' and

see the 'spun-off' plants which are 'surplus to the needs of the new corporation,' we see the after effects of bad judgment. Bad judgment can always be determined by hindsight; so, for that matter, can good judgment. To help make good judgment by foresight is the problem. This consists of a careful analysis of the industry under review, its future course, its place in our economy and finally the role of the particular corporation in that industry. The next step is the analysis of the location requirements of this company and finally the selection of the many suitable places which should be considered. Too few industries attempt to make or have made for them an economic analysis of the city or region to which they intend to move. As testimony that this field is seldom touched upon are the many plants that are on the market for sale. Many of them are relatively new and in practically every case they will be sold at a loss because no economic analysis of the location and its suitability for a particular industry was made prior to construction. There are usually state as well as Federal agencies which collect data on manufacturing." This should be collected by the analyst. However, he "should not stop there, but should take a look at the nature of the industries represented and ask the question that any investor asks, i.e., 'Are these growth industries or are they dying industries?'"

"Or, and this is important, the competition for employees may be tough in the years ahead, unless the service industries are able to grow in order to make it a place to attract people as a place to live. If there is adequate space for people to live and the region has all of the community services in sufficient quantity, the chances are that it will grow and that any manufacturer will be profitable growing with it, *if his products are the sort that should be made there.*" When his products are no longer the sort that should be made there, disasters break out, of the sort described by Laurence C. Plowman, whose job has been to try to ease the shock to New England occasioned by the removal of the plants of Textron, Inc. "We must face the fact," he said, "that there is by no means a universal acceptance of acknowledged responsibility in this area."

"However, there are also some striking instances of industries forced into a move by economics, voluntarily assuming responsibility for helping the community recover its balance through the acquisition of new industry to take up the payroll slack. My experience includes firsthand contact with case examples in communities in New England where the textile industry has been moving out and away—and to some degree these reflect conditions described by the reverse or 'other side' of the coin. However, despite this, the results obtained through industry-community cooperation have been beneficial. . . ."

"In Textron it is policy, approved and adopted by directors of the company, as a worthwhile expenditure for better community and public relations."

The job is one of salesmanship. In Nashua, New Hampshire, for instance, in 1948, disaster was averted when Textron closed its mills there because the "Nashua Industrial Committee" was formed of local businessmen. It bought the Textron properties (with Textron holding the mortgage), in order to lease them to other industries. "The next move was to tell the story of what Nashua had to offer in industries outside of New Hampshire. Using every possible media within our modest means—newspapers, radio and direct mail—we pointed out our ideal location, available space, and living and working conditions in Nashua. We visited prospects or invited them to visit us. We made no promise of subsidies, tax abatements or special considerations. We had space to rent at reasonable rates and an excellent supply of labor to offer. As a result, we attracted industries which leased or bought space from the Foundation and provided more than 2500 immediate jobs in addition to other jobs provided by industries which could not utilize our space but found locations in other parts of the city at our suggestion. More than 5000 people are today employed in some 23 different companies in this property as a result of this effort."

The prodigy of salesmanship must not, however, be confused with an economic study. Mr. Scribner pointed out: "The economic study to be effective must be completely objective. It must call the shots as they are seen. It should never be perverted to 'selling' the community or region." Mr. Barkin, of the Textile Workers' Union, doubted that the selling effort was effective: "The realtor approach for the industrial redevelopment of the distressed area is apparently inadequate" to rejuvenate or rehabilitate the areas left stranded, since the textile worker in New England is, in Mr. Plowman's words, "actually a displaced person."

The existing problems persists, though economic analysis may help avoid some new ones.

CITY AND SUBURB

Just as no ready answers seem available to the problems of planning the whole expanding metropolis, or to all the problems of rehabilitation and rejuvenation left behind by industry moving away, so no debate between city and suburb could produce a very determined opposition of ideas. Frazar B. Wilde of Connecticut General used the continuing operation of his company's building during last February's record snowstorm to point out its superior efficiency. "As much as any one thing that has happened since we moved into our new building back when the dogwoods were blooming last spring," he continued, "that storm brought into focus the picture of a business environment located just beyond the edge of town, in a pastoral setting where an ample site let us build as we thought best suited our needs and

those of our employees. . . . Today, just ten months after we moved, we can report no regrets. The values that we had hoped to derive from going to the country have materialized."

Connecticut General's move to the country was based on dismissal of a "balanced transportation system," and acceptance of the automobile as the one means of transportation, an acceptance which has grown even more complete during the ten months of occupancy.

"We accepted the idea that most people wanted to drive to work. . . . Since we moved, the percentage of employees using the buses has gone down steadily; the percentage coming by car has grown. When we moved we provided one parking space for every two employees. We shall celebrate our first anniversary in the new building by constructing a large new parking area. The ratio of one for two is not enough. It should be much closer to one for one."

S. Westcott Toole, discussing the Prudential's reaction to the move to the suburbs, listed an impressive series of reasons for remaining in the city. "All these downtown advantages . . . can really be confirmed," he said, "by the Prudential's own experience. Our Company owns office buildings for home office use containing over 4,300,000 sq ft of rentable area. . . . In 1948 the company embarked upon a decentralization program. . . . I am happy to say that it has accomplished the objectives that we hoped for. In providing office buildings for our decentralized operations, we have always located our buildings within the city limits. In some instances they are well removed from the downtown area. In other instances they are in the central city itself." Generally, though, they are on the edge of the central city, as in Chicago, for the light, air and chance for the building to stand independently as a symbol, if not farther out, as in Houston and Jacksonville, where swimming pools and plenty of parking for the ubiquitous motor car can be provided. "We require," he said later, "a prestige location: environment, setting and parking." Connecticut General, on the other hand, was not, Mr. Wilde pointed out in answer to a question, trying to escape the city limits. "Areas large or small need more metropolitan authorities," he averred, so as to arrive at a wider geographical tax base. Everyone in the metropolitan area should pay for its services. Connecticut General's site would presumably be well within the successor to the city limits. "Other pioneers" in Hartford thirty years ago "moved even farther out" than a mile from the Old State House. They "survived the warnings of their friends that people wouldn't think of going so far to work; that the main banking offices and the department stores had to be close by. The city has long since engulfed some of the pioneers. They are downtown now, because downtown moved out to them." The difference in Connecticut General's and Prudential's attitudes seems to be one of degree, not of any really

sharp theoretical difference. Both want a prestige location, environment, setting, and parking, at a conveniently reachable point. The difference comes in whether the automobile's function is regarded as important or as vital.

WHAT IS A CITY?

The question that didn't get much asked, significantly, in the numerous testimonials to the importance of the central city, from the floor as well as from the speakers, is "What is a city?" It was implicit—perhaps even partly answered—in a film shown at an evening meeting, a film of Chicago made by James Davis, of Princeton, in which there appeared the particular kind of life that makes a city, the raw excitement of elevateds, people, fire escapes, and busy streets. Mr. Schmidt had started his account of Pittsburgh's redevelopment with a challenge hurled at Pittsburgh in 1947 in *Fortune* magazine: "In an article reviewing the beginning of our post-war civic efforts, it concluded, 'Pittsburgh is the test of industrialism everywhere to renew itself, to rebuild upon the gritty ruins of the past a society more equitable, more spacious, more in the human scale!'" *Fortune* discussed Pittsburgh again in April 1958, after the Princeton conference, and took to task the spacious Equitable scheme for Gateway Center, because the human scale was not yet present. The center, unlike Mellon Square nearby, is an "ersatz suburb," covered with grass but not with people. People and their activities are shoved underground. Pittsburgh helps demonstrate that space and the movement of cars can be exciting but that spaciousness is not enough. In the very heart of Trenton, New Jersey, Professor LaBatut reminded the conference, is a cloverleaf for the local freeway which is rather larger than the Place de la Concorde. The difference in urban amenity between the two spaces is alarmingly evident.

"We hope at this meeting to explore some of the important experiences of American business and industry as decisions have been made, to discuss some of the implications of those decisions and perhaps to arrive at an understanding of the broad business and industrial statesmanship which forms the basis of architecture in its broadest sense," Mr. McLaughlin had said in opening the Conference. These important experiences of business and industry turn out to be kaleidoscopically various, heartily prodigious and strongly averse to being pigeon-holed. For an architect, it is no real surprise that some aspects of broad business and industrial statesmanship should elude understanding, and even credulity; opposing trends sometimes seem curiously to merge. This is not to deny, however, that from these counsels of industry often come the decisions which shape our design decisions and so our architecture, which in its turn shapes us.

In the article beginning below, a distinguished authority on construction economics reveals that more Americans now own, are building, or are renting more housing of larger area and of better materials and equipment than at any time in our history. This interesting fact points up the challenge to constantly improved housing design. There is no doubt that the opportunity exists!

HOUSING

BUILDING TYPES STUDY 260

®

Accent on Better Living

By THOMAS S. HOLDEN, Vice Chairman F. W. Dodge Corporation

Better housing has been a major feature in the spectacular advances in American living standards during the postwar period. While this has been a matter of common observation, it is also forcibly brought out by analysis of the statistical records of personal consumption expenditures compiled and published by the United States Department of Commerce.

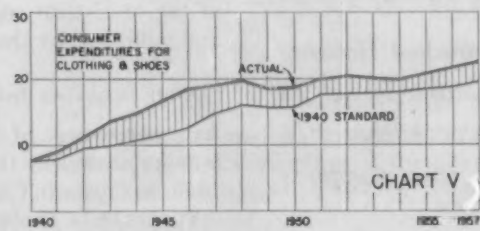
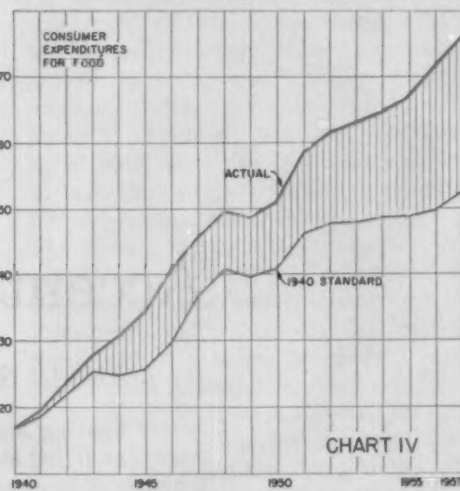
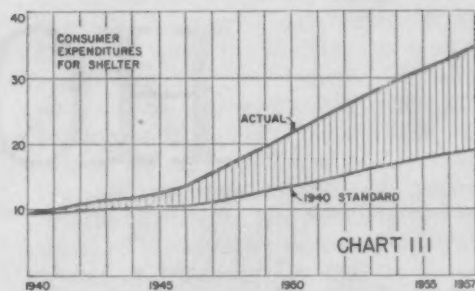
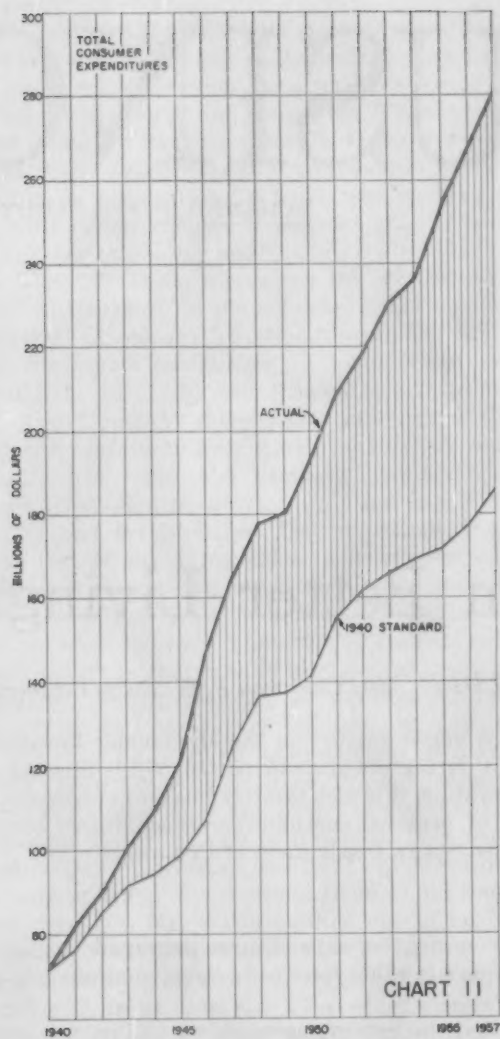
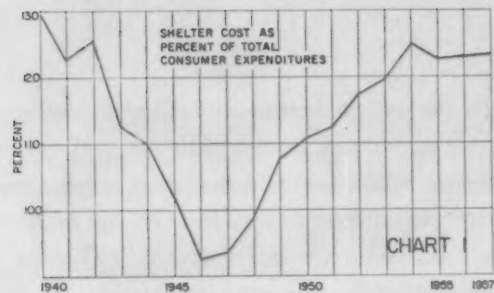
*Improved Housing
A Major Factor In
Postwar Advances In
U.S. Living Standards*

Shelter Spending Increased

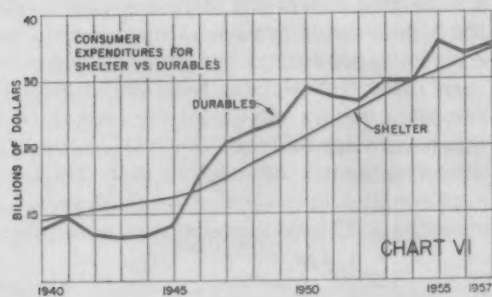
As a percentage of total consumption expenditures aggregate annual outlays for shelter by the nation's families have been rising continuously since 1946, as shown in Chart I.

It should be explained that the housing costs shown in Charts I and III do not represent the capital costs of new housing (which serves only a marginal fraction of the whole population), but they cover current expenditures for shelter as represented by rents paid by tenant families plus a calculated equivalent of rent (amortization, interest, taxes, etc.) for all the home-owning families. Housing costs, as here used, cover basic shelter costs only, not outlays for housing operation.

In 1946, first postwar year, only 9.28 per cent of the nation's total consumption dollars was spent for shelter. A long-time downward trend for this percentage had been in evidence since 1909, the earliest year for which overall data are available. (In 1909, American families had laid out for rent—plus rental equivalent of owned homes—a full 19 per cent of their total spending.) The downtrend was naturally accelerated during war years



Data for charts derived from U. S. Department of Commerce figures



partly by rent control and partly by the fact that better housing was not available in a measure adequate to supply any considerable potential demand arising from improved national income. From 1946 to 1957 the percentage of total consumption expenditures allocated to housing rose from 9.28 to 12.30. This upward trend reflects a very considerable improvement for housing in the total consumption expenditures picture.

Housing Lagged In The 1940's

An earlier study by the present writer ("We Can Afford Better Housing," published in the September, 1950, issue of ARCHITECTURAL RECORD) brought out some interesting facts. It showed the first category of family consumption expenditures to rise as incomes improved after the great depression was food. A better rounded diet was apparently the most generally immediate desire when the opportunity arose for resumption of pre-depression living standards. Improved diet standards continued a dominant factor in the rising standard of living throughout the period of the present study.

The earlier study also showed that during the war years and for several years following, family expenditures for clothing and shoes exceeded housing expenditures; there were even some years in the late 1940's when combined expenditures for liquor, tobacco, and amusements exceeded expenditures for shelter. The earlier study indicated that the time was ripe for large-scale building of quality housing and a general upgrading of housing standards so that this category of facilities would catch up with other facilities, goods, and services being enjoyed by the American people.

Advancing Living Standards

The general advance in living standards, as shown in the records of total consumer expenditures, is pictured in Chart II. The year 1940 is arbitrarily chosen as the base year for comparisons; it serves as a prewar base, and it was about the time that the nation had regained the standards which had prevailed in 1929 and had lapsed in the intervening depression years. The lower curve, representing the assumed consumption requirements of each year at the 1940 standard, is made up as follows: For each year the actual 1940 consumption is multiplied by two factors, one to take care of the population increase of the particular year over 1940 and one to take care of the increase in the consumer price index over 1940. The excess of actual year-by-year expenditures over these calculated 1940-standard figures is indicated by the shaded area of the chart. The spread between the two curves is a rough measure of the overall improvement in consumption standards—the extent to which Americans were living better in 1957 than in 1940, and in the intervening years.

Housing Standards Have Caught Up

A similar analysis of housing expenditures compared with 1940 housing standards is shown in Chart III. In this the improvement factor (spread between the two curves) is small during the war years, but of steadily increasing magnitude from 1946 on. Charts IV and V show that there was a continued upgrading of standards in food consumption and in clothing and shoes purchased right through the year 1957.

In Chart VI is shown a year-by-year comparison between total housing expenditures and expenditures for durable goods (automobiles and parts, household furni-

ture and appliances, radio and television sets, boats, books, jewelry, etc.). For the first time durable goods purchases leaped ahead of housing expenditures in 1946, and have continued ahead through 1957. However, the spread between the two aggregates of expenditures has been very narrow during the past four years. As a factor in improved living standards, better housing has been catching up with durable goods ownership. Actually, during the 1946-1957 period household furnishings and equipment accounted for nearly 46 per cent of durable goods expenditures, exceeding outlays for automobiles and parts in all but two of the years.

Basic Factors in Housing Progress

Better housing standards in general have resulted principally from three factors:

1. The building of 12,903,600 new non-farm dwelling units from 1946 through 1957.
2. An upgrading of the home-building industry's product during a number of the years in question. For example, average floor area in new houses increased from 983 square feet in 1950 to 1230 square feet in 1956; the percentage of new houses with three or more bedrooms increased from 34 in 1950 to 78 in 1956.
3. The moving of millions of families each year into new houses and into existing dwellings of better grade than those they previously occupied. Recently, one person in five has moved each year, two thirds of them going to new addresses in the same county.

A Consumption Expenditure Pattern

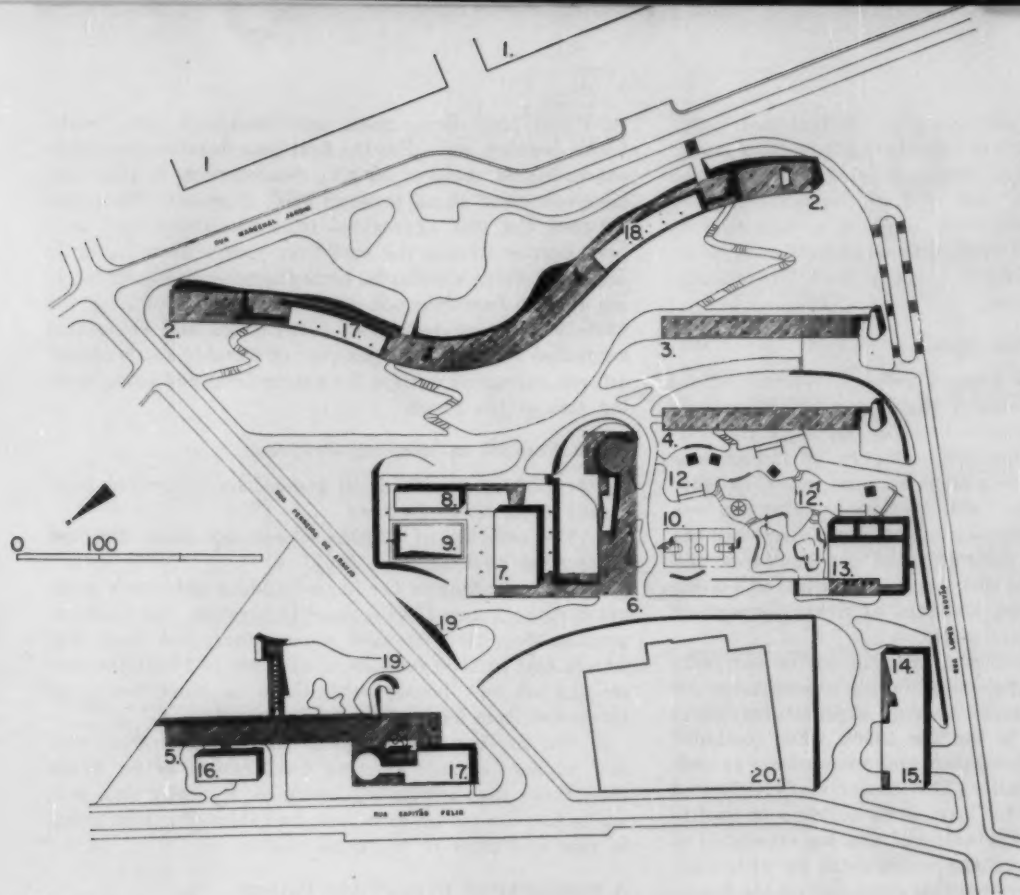
The predominant importance in American family budgets of shelter, house furnishing and equipping, and household operation is strikingly illustrated in the appended table showing the nation's consumption expenditure pattern for the year 1956. (This is the latest year for which this detailed breakdown is available.)

1956 CONSUMPTION EXPENDITURES

(National Totals)

Housing (rent plus equivalent)	\$32,841,000,000
Home furnishings and appliances	12,396,000,000
Household operation	23,717,000,000
Food	71,326,000,000
Clothing and shoes	21,813,000,000
Care of clothing and person	7,061,000,000
Automobiles and parts	14,572,000,000
Transportation supplies and services (oil, gas, repairs, public transportation, etc.)	15,742,000,000
Alcohol and tobacco	15,041,000,000
Amusement and recreation	13,844,000,000
Personal business	13,968,000,000
Medical care and death expense	12,793,000,000
Education, religion, charity, etc.	9,710,000,000
Durable personal effects (jewelry, etc.)	2,336,000,000
TOTAL	\$267,160,000,000

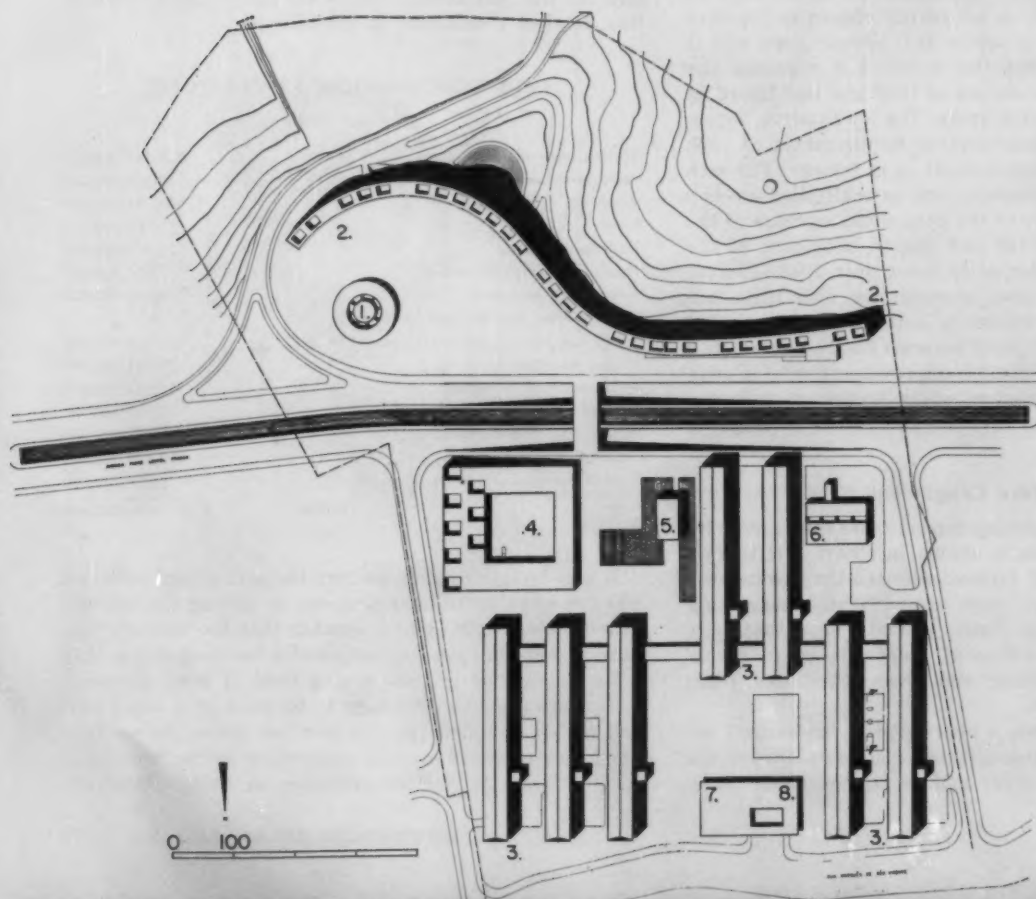
It may be fairly concluded that the period here reviewed was one of extraordinary progress in raising the nation's housing standards. It also appears that the nation's pattern of consumption has achieved a better balance than it previously had in quite a long time, if ever. However, a population which continues to increase at a rapid rate and which has had its appetite for better living only partly satisfied will keep on demanding better housing as a vital factor in further advances in living standards.



PEDREGULHO PLAN LEGEND

1. City Reservoir
2. Apartments, Type I
3. Apartments, Type II
4. Apartments, Type II
5. Apartments, Type III
6. Primary School
7. Gymnasium
8. Lockers
9. Pool
10. Basketball
11. Children's Pool
12. Playground
13. Health Center
14. Laundry
15. Market
16. Nursery
17. Nursery School
18. Kindergarten
19. Underground Walk
20. Workshop

NEIGHBORHOOD PUBLIC



GAVEA PLAN LEGEND

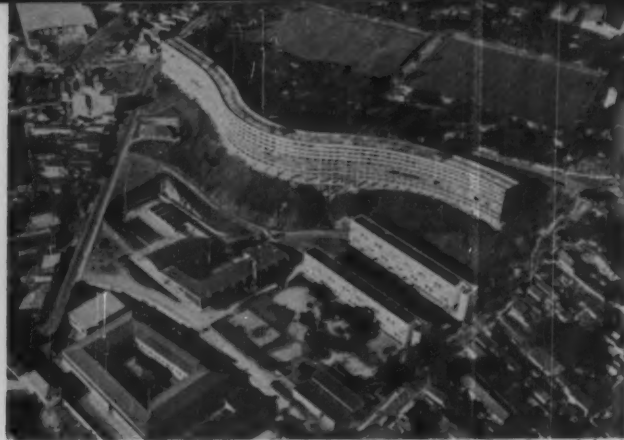
1. Kindergarten
2. Apartments, Type I
3. Apartments, Type II
4. Primary School
5. Church
6. Health Center
7. Market
8. Laundry

*Pedregulho and Gavea
Neighborhood Housing Units*

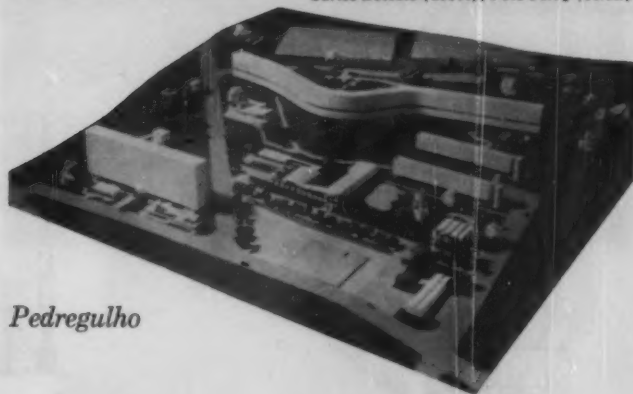
*Departamento de Habitação Popular
City of Rio de Janeiro, Brazil*

Architect: Affonso Eduardo Reidy

The municipality of Rio de Janeiro—to forestall slum growth and provide housing for its small wage earners—initiated a program of “neighborhood housing units” in various parts of the city, for which architect Reidy drew experimental plans. The first to be constructed was Pedregulho; the next was Gavea; others will follow. The results to date are admirable—as civic improvements and as architectural achievements.



Carlos Botelho (above), Foto Jerry (below)



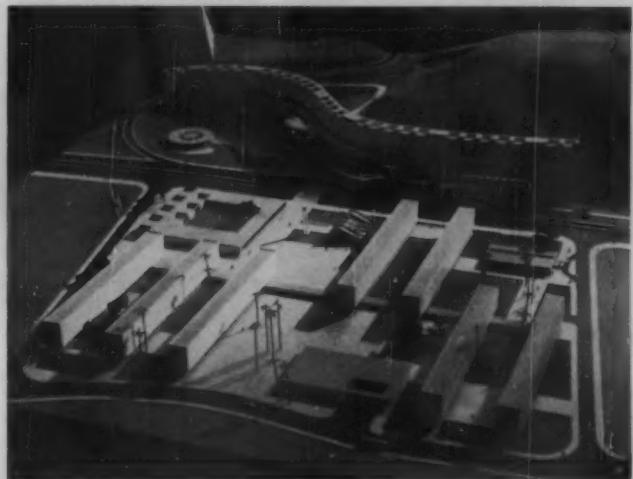
Pedregulho

HOUSING UNITS IN RIO DE JANEIRO

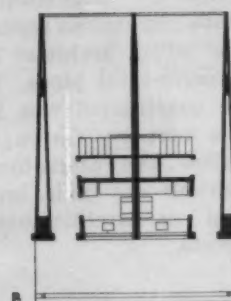
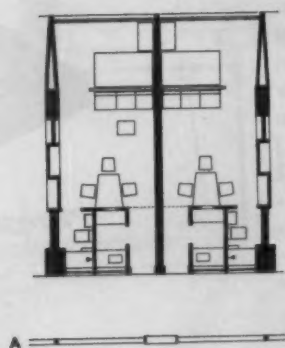
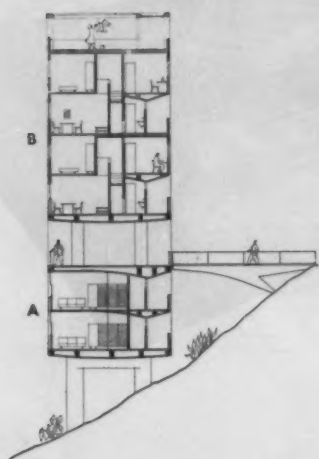
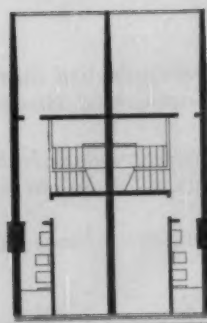
The thinking back of the programming and development of public housing in Rio is nicely explained by architect Affonso Reidy, who says, “It is slowly beginning to be understood by the public—and more importantly by authorities—that the problem of providing public housing has altered radically. Just as all our lives have changed and become more complex, so also have the services and amenities required by modern living. In addition to the basic, normal needs such as space, light, power, etc., there must now be—as well—planned medical and pediatric centers, school units, religious and social centers, several kinds of recreation areas, etc. In fact, the plan must include all those facilities which create a neighborhood capable of providing a full and satisfying life for its residents.

“The lack of such amenities, or their mis-planning, along with

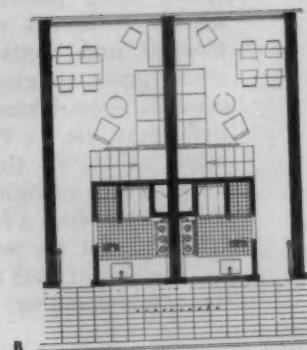
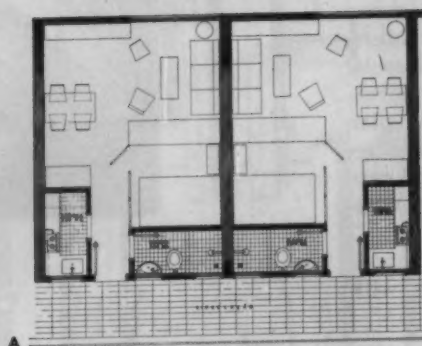
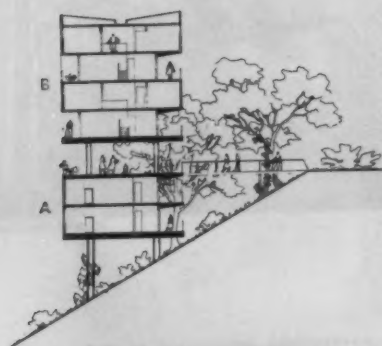
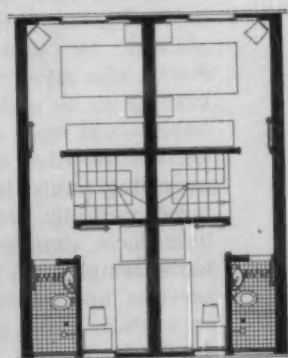
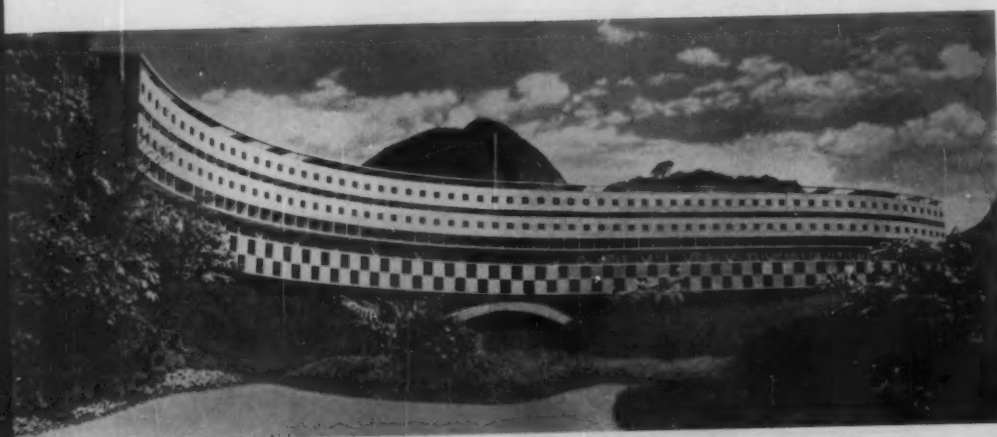
Gavea



Marcel Gautherot



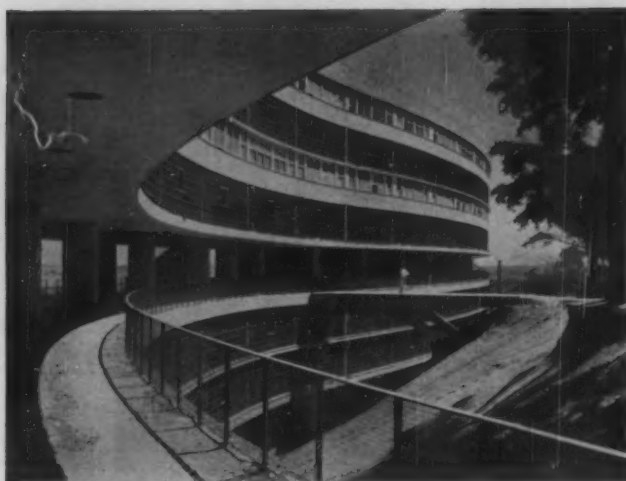
HOUSING FOR THE PEOPLE OF RIO DE JANEIRO



the absence of an organized social welfare service, are the major causes of the occurrence of slums and the various social ills that we associate with slum areas."

Pedregulho and Gavea are both built on sharply sloping sites against hillsides, with the large upper apartment building curved to follow the contour of the hill. In these buildings (called Type I for the plans at left) the top 4 floors are duplex units (B), the lower 2 floors are one-room units (A), and the intermediate, mostly open level is devoted to sheltered play areas, general access and circulation, administration, social welfare, nursery school, etc.

In both projects there is complete separation of pedestrian and motor traffic so one has free circulation to all buildings. The program for each neighborhood unit



Pedregulho, Type I

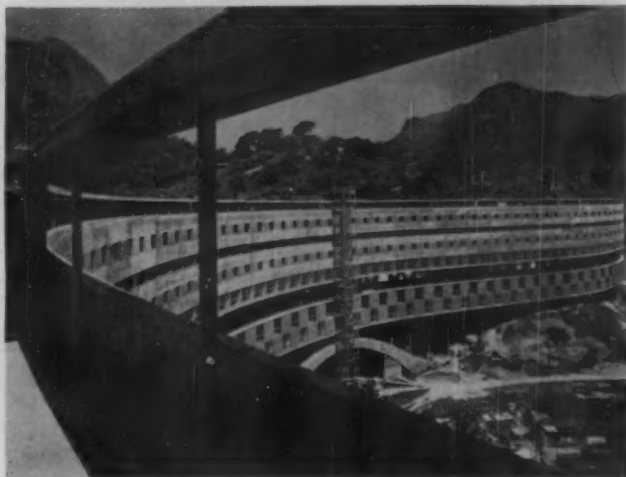
PUBLIC HOUSING IN RIO

was established following a census of future residents by the city housing department. Pedregulho houses 570 families and has a demographic density of 4 persons per 100 sq yds; Gavea accommodates 750 families and has a density of 3 persons per 100 sq yds.

Each plan includes areas for adult and children's recreation, a primary school, market, laundry, health center, church, kindergarten, and nursery school. In addition, Gavea has an outdoor theater, while Pedregulho has a swimming pool, gymnasium, and children's canteen for school lunches.

On the following page, typical apartment plans for the smaller buildings (Type II) are shown. Note that while these are normally 3-bedroom units, adjacent apartments can readily annex one of the bedrooms, thus providing a 2- and 4-bedroom combination. Such flexibility is extremely useful in administering the projects.

Gavea, Type I

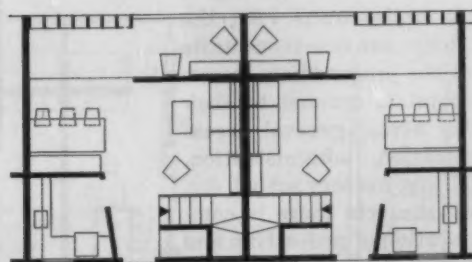
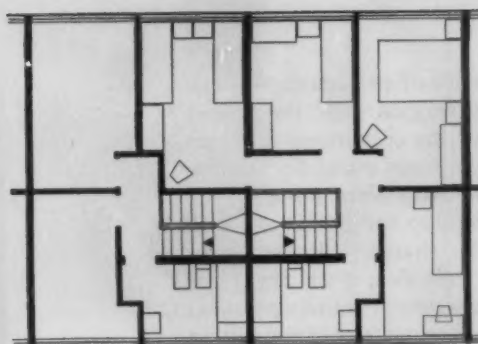


All photos these 2 pages: Aertse Michel



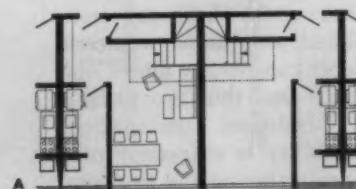
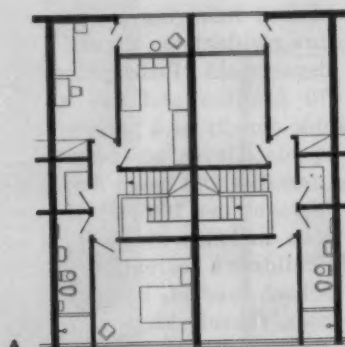
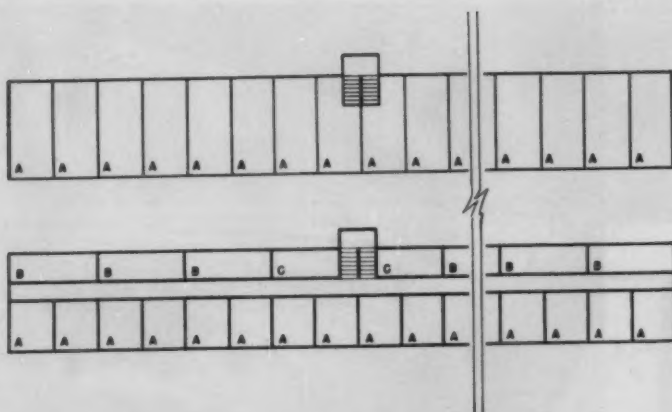
Marcel Gautherot

Pedregulho, Type II



PUBLIC HOUSING IN RIO

Gavea, Type II



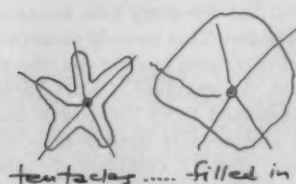
The various types of housing considered in the light of their characteristics, appropriate uses, possible combinations, and relationships with city and suburbs

Housing Patterns and What Makes Them

Text and sketches by HARRY M. WEESE

The forces shaping cities today are complex and not as rational or understandable as in historic times. Housing forms the bulk of the city and is thus basic in determining its character, which in turn attests to the forces forming the environmental pattern. Were these forces and patterns satisfactory, our city dwelling would not be allowed to deteriorate in one or two generations. As it is, only a few patterns survive and acquire historic values to become monuments in the configuration of that accretion of human endeavor which is a lasting city. This is the story of the Old World. In its place we now offer a brave New World pattern of shelter based on our new society.

Originally we were an agricultural country of land-owners and strong families; our farmsteads grew to agglomerations of permanent buildings handed down through several generations, as were the dwellings surrounding village greens in the country towns. That was early 19th-century America. Industrialization brought en-



larged cities which grew densely along tentacles of street-car lines and commuter roads. The automobile further spread the city in the 20's and brought unpre-

cedented disorder as well. Yet that sprawl was nothing compared with the expansion and migration caused by World War II. The new mobility of people and services spread the city far and wide and changed the emphasis from apartments to single-family houses, since the central city had used up its land and was hemmed in by surrounding towns.

Builders learned to deal in large quantities; project builders replaced the carpenter builders who, during the 30's, had erected—with FHA help—four of five houses a year on vacant lots in the arrested subdivisions of the 20's. FHA's timely legislation aided the orderly completion of unfinished business, served to spur building activity and home ownership, was suitable to the depression needs of the 30's.

After the war, in a climate of unprecedented demand, we went back to business as usual, with the free-standing

house as the mainstay of new housing supply and the answer to the American dream.

While the cities stood still (except for some high-rent apartments and public housing), the fringe lands were quickly covered with houses built with government assistance designed for a different purpose in another era. The builders' lobby offered raw land development of single-family dwellings as the way* to add to the housing supply of the deteriorating and jammed cities. The government would not insure mortgages for inlying city areas; instead, small-down-payment terms were offered to induce people to abandon them. This policy rejected the original premise that government would help when private enterprise could not. Rejected in financing improvements of city dwellings and blandished by the monthly-payment-cheaper-than-rent, city folk in great numbers migrated to the suburbs. Development of fringe lands at the expense of central areas accelerated the deterioration and abandonment of the city, accelerated the decline of mass transit systems, and aggravated highway confusion. Also, entire suburban communities became stratified in terms of family composition, age, and income, contributing to the dilemma of conformity. Yet, for those reared in the city there was no return to the city—for it continued to deteriorate.

Such is the process of income stratification under mass building techniques in large metropolitan areas. Contrast this picture with the smaller, older, integrated community or with the older pre-merchant-built community where land was subdivided to persons who built individual houses over a span of time. Such communities are diverse and stable and can support wide variations in income levels. They are integrated, and their citizens put down roots. Growing up in such a town is a far richer experience than the stratified, nomadic, conformist way of mass-built suburbia.

Under present conditions we can achieve such diversity and integration only in the small, complete city or in the re-worked older communities of the central city, provided one accepts the basic proposition that we cannot build a city using one method, one philosophy, one housing type,



*This does not take into account the brief episode of Section 608.

and one moment in time. Although techniques and costs have improved, the results hardly demonstrate the best way to house America or improve our cities. Urban life must be maintained, improved, and made attractive again. But this cannot happen if each generation knocks everything down and starts over. Nor can we run away from one mess to create another in a synthetic new town. We can build the metropolitan area only by fitting into a large, idealized concept the efforts of many—all devoted to preserving, reworking, renewing, and adding for each generation the best it can offer toward a living continuity on the chosen ground. This requires a philosophy, a plan, a discipline.

Let us consider some of the ways willy-nilly new construction increases the housing supply of metropolitan areas. Some of these—such as trailers and motels—are beyond the pale of what is ordinarily considered housing, yet have become domiciles for increasing numbers and are part of the total pattern we must consider.

Mobile Homes

Since mobile homes now command over one tenth of the new shelter market, we should examine their place in serving housing needs. It may be that trailers form a better housing pattern for certain income and occupational groups than the pseudo-permanency of the cheaper development. Life in a well-ordered trailer park appeals to certain people; it offers amenities many developments do not. Best of all, the park concentrates dwellings in half the space of a tract, can be tucked away under the



mobile homes in ambush...

trees and separated from the surroundings. Trailer parks should be hidden in the fringes of green belts or forest preserves. The mobile home should be made respectable

for it is an honest answer to the needs of transient workers, newlyweds, certain older persons, and those who simply do not like to settle down for long. There must be, however, density control and a way of planning for schooling and other community services.

Motels

When motels include kitchenettes, they are definitely one-room homes. Located in many communities on the fringes, or even downtown, they are occupied on a semi-permanent basis and become housing units.

Free-Standing Houses

Converting farmland to four families per acre, thus hiking land values, is the prime incentive to raw land development. With government aid, this is now the predominant pattern. It is recognizable by wiggly streets going nowhere, close-spaced houses surmounted by a sea of roofs skewered with poles festooned with wires.



sea of roofs....

It varies from builder to builder—some split, some ranch, seldom two stories. The staccato repetition of closely spaced houses with false individuality seemingly containing standardized people is advertised by standard lamps in standard picture windows. The lack of focus in street pattern, of town center, of planned community facilities, of planned green belts or parks, and the over-all pattern which merges without break into the next, all evidence a mechanical approach to community building under mass-production methods. Landscaping is limited to a ruff of shrubbery around the house itself, while gardening is simply lawn mowing. These evidence the rootless conception.

The Row House

The row house offers a better use of fringe land for modest dwellings in the light of land saving and a more concentrated, permanent community. Regarded as un-American in the provincial interior, it has been the basic pattern in seaboard Boston, New Orleans, and San Francisco. The row house in these cities comes directly from early American tradition. Now, after much re-education, we are beginning to appreciate and use the row house idea again.

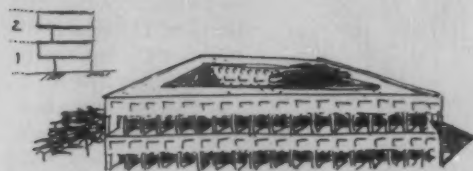
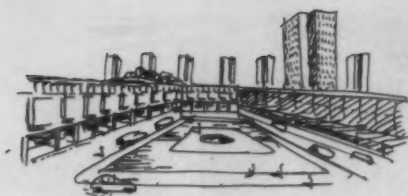
The row house offers economy, permanence, and a configuration which spells community. Row houses, as high rise, are thought of as belonging in a city. Standard zoning and financing keep them there, although with outward movement of industry there are good reasons for building them in the fringe. Certainly, row houses offer a way to save land for community uses and green belts, plus a way to build permanently at no premium. They expose less than half the façade of a free-standing house. Their other economies are well known, and tenant privacy is without question rediscovered in them.

One-Story Row Houses

One-story row houses are generally not the best solution, particularly when there is any site undulation, since the view is then largely roofs with vents, skylights, television antennas, wires, tar, and gravel. However, in some areas there is definite promise in the one-story row house of a type known as the atrium house. This age-old pattern has been frowned on by zoning framers, even in the very places for which it is ideal. An example is Fort Lauderdale, where regulations imported from the North forbid common walls above 6 ft and require useless ribbons of land between the huddled, slightly detached dwellings. Contrast this with Mediterranean or South American patterns in a similar climate. There, the street is a walled enclosure behind which fountains play and one can live in privacy within rooms overlooking the atrium gardens. The atrium house also has a place in northern cities for those who like the expansiveness of one floor and can afford the necessary 4000 ft of expensive land.

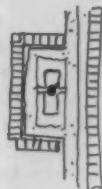
Two-Story Row Houses

If one believes the duplex (two houses masquerading as one) is a creature of dubious value, the first step toward urbanity from the detached house is the two-story row house—appropriate for densities of 10 to 20 families per acre. It does very well where it need not try to coexist with taller buildings, in which case it is improperly scaled in size and intensity. Such an environment (over 30 per acre) calls for the three-story town house. The early Southwest



double maisonette
around a square

three story
townhouse
around a
square



Washington residential square studies, seconded by the admirable Eastwick plans, show a row house pattern which uses land efficiently, provides separation

of street, private gardens and commons, and creates commons that achieve an intimacy proper for groups. Row houses can restore the two-story house to grace. This pattern is proven by experience. Chelsea, Georgetown, and Beacon Hill are examples that demonstrate the lasting power of a housing type which has basic virtues and can be owned by its occupant.

On the negative side we have seen tenements built over stores on streetcar ribbons, court-type railroad flats at 90 per cent coverage, three-story walk-ups, and old-law tenements. These are incompatible with good urban living—past or present—and must be entirely rebuilt.



an outdoor room...

a square of three story houses..

Speaking of patterns, a further curiosity is the refusal of lenders, insurers, and zoners to countenance apartments and row houses in suburbia. Newly marrieds, old folks, and medium-income groups must leave town. Stratified thinking places likes with likes, while in reality, the country or fringe location is excellent for row houses. Scandinavia abounds in attractive examples.

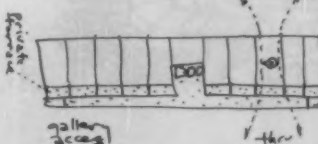
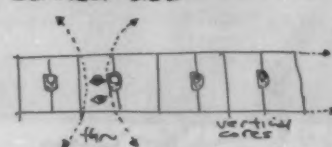
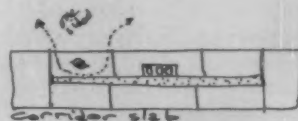
Double Maisonettes

After two- and three-story row houses, appropriate for a density of 10 to 20 families per acre, comes the two-tiered row house (or double maisonette) at 40 per acre, 30 per cent coverage. There is no American word for this type, which has not caught on here because of the complex prejudice structure. PHA has forbidden it, private developers have never heard of it, and FHA is afraid of it, although it accounts for the majority of the London County Council's redevelopment effort. There, it is used both on the ground and in multi-storied tiers in their admirable postwar developments. A two-tiered row house gives you four stories for a three-story walk, plus through

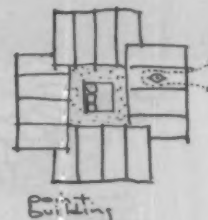
views and ventilation, and everyman's castle has its own front door. It can be occupant-owned, either on a two-family basis or as a co-op. It is an excellent replacement for the obsolete three-story walk-up.

High Rise

When density exceeds 40 families per acre—the sky's the limit. There are some large-city areas entirely developed in high rise to 300 families and more per acre. As Street-



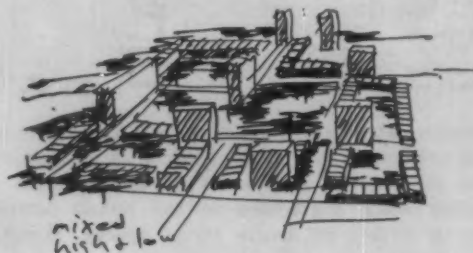
types of
high rise



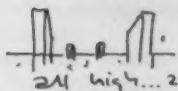
erville on Chicago's Lake Front demonstrates, when the once vacant lots used as interim open space, playgrounds, private parks, tennis clubs, and parking lots are built over, occupancy changes from families with growing children to doubled-up working girls, bachelors, and childless families. A degree of wholesomeness goes out of the area; it starts downgrade.

Unless growing families can be held, there is less chance of the city retaining those income groups which have a choice. Those with children who want to live in the city look for three things: a spot of outdoors to call their own, a community, and an equity. They would like a school as well, but the district lines as now drawn generally downgrade public education.

In town-house areas, high-rise infiltration can be critical. The entrepreneur usually builds as high and covers

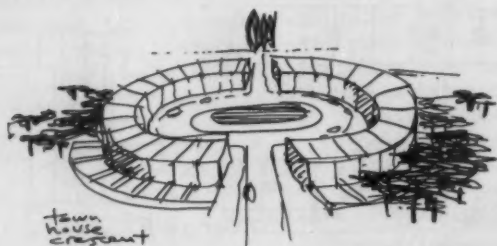


mixed
high & low



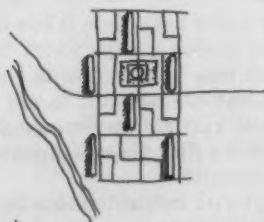
as much as codes and variances will allow. He probably means well, but the result is scarcely upgrading in terms of type of occupancy. The over-built site caters to a lower income occupancy, which drives older residents and owner-occupants away. When single-family occupancy in town houses falls below 10 or 15 per cent of population, the mixed pattern of high rise and town houses loses character and residential tone. The end result is either an arrested development of tall buildings mixed with rooming houses, or an over-dense area exclusively in tall buildings. Both patterns will lack children.

Local redevelopment agencies often tend to think of projects rather than communities and try to recoup write-down costs by maximum densities, creating redevelopment in the image of speculative venture or public housing. This, of course, precludes any of the graciousness of the streets of Bloomsbury or Bath, lined with trees and



the entrance doors of individuals. It precludes the attractive mixed high and low developments of the London County Council (Hackney and Picton-Camberwell among them), which reinforce the city core and acknowledge the desirability of urban living.

The loose texture of central London and Paris makes them habitable to the heart and brings these cities alive.

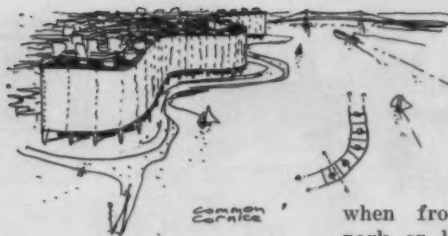


It takes effort and leadership to secure proper coexistence of town houses and tall buildings which will bring that



compromise between cliff dwelling and suburbia so necessary in attracting that element which is now deserting. But its achievement guarantees the city's future.

Another basic ingredient in the mixed pattern is walling-in streets to create street spaces. Sometimes,



when fronting a park or lake, tall apartment buildings

could come to a common cornice line rather than create an unoriented scatter in the image of free-standing suburbia.* Slab buildings with hotel corridors and single-exposure apartments are the style of developers. Exterior galleries and two apartments per elevator lobby offer relief from this pattern.

Public housing was conceived in a depression-born aura of concern for the slum dweller and midwifed by the social worker. We have as a result low-income ghettos of ever-increasing size permanently dedicated as such. This stratification is another example of the mechanical approach to housing and life itself that cries out for reconsideration.

The British can teach us a lesson: The London County Council redevelops London with more than the view of institutions for broken families and the lower elements of society. They regard slum clearance and city rebuilding as one, creating environments that can grow, appreciate, and become reinforced by social order. This is done not by establishing income maximums but by building for a cross section.

Who Makes Housing Patterns

Architects and clients have—in reality—very little to say about the basic shape and arrangement of buildings in which people live. The rules of the game hedge in the opportunities for creative innovation. Pattern is largely established by codes, ordinances, financing methods, federal regulations, PHA, FHA, URA, fire-insurance lobbies, health and safety lobbies, all operating on a national scale. This is demonstrated by the limited pattern developed here in contrast to the kaleidoscopic pattern of foreign cities working under different rules.

Since the only way to break out of the mediocre mold of our housing pattern is to break a rule, one can see how important it is that the validity of these rules is constantly under scrutiny. Modern architecture not many years back had to break down barriers of acceptance, and now housing architecture is facing new and subtle barriers. Housing design is hedged in, surrounded, and overwhelmed by a super-bureaucracy which would reduce everything to formula and put it on a punch card. We are trying to circumvent outmoded legislation framed by pressure groups. The effect has weakened cities while despoiling their fringes, as well as the small communities caught in the swelling tide of irresponsible development. The new laws must provide new incentives to favor the city, renewal and clearance funds to create sites, and an aggressive middle-income and cooperative financing program which can fundamentally influence the pattern. Otherwise, we will continue to fabricate a Brave New World no more interesting or livable than the punch card that fostered it.

*Consider Park Avenue then and now.



VARIETY AND OPEN SPACE FOR NEW YORK

Kips Bay Park Apartments, New York City

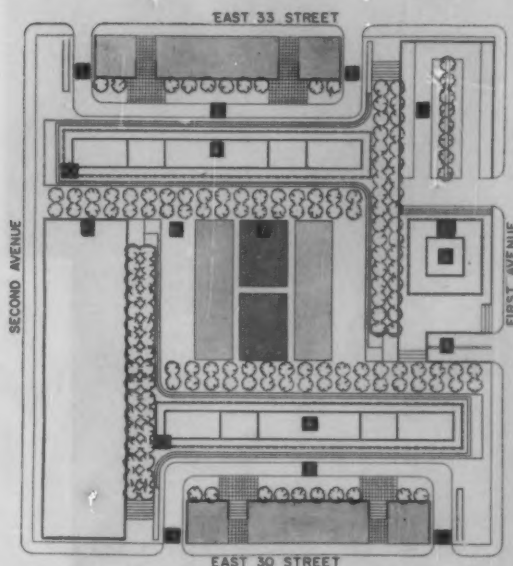
I. M. Pei & Associates, Architects
S. J. Kessler & Sons, Associated

Webb & Knapp, Inc., Developers

In contrast to the abandoned scheme for the same site—one which called for 7 buildings spaced over the 3-block area—this new design offers the amenity of a broad, central, landscaped plaza spreading about a reflecting pool 195 by 65 ft, with parking for 250 cars beneath.

Two 21-story apartment buildings of architectural concrete, with floor-to-ceiling glass infilling—interrupted only by 7-in.-high air conditioning units—will flank the plaza. The 410-ft-long structures will contain 1136 apartments ranging in size from studio to three-bedroom units.

A 10-story professional building for medical suites (convenient to the new hospital across the avenue) and a one-story shopping center will complete the scheme.



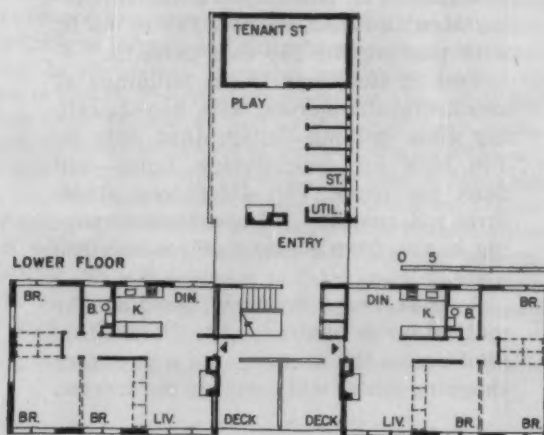
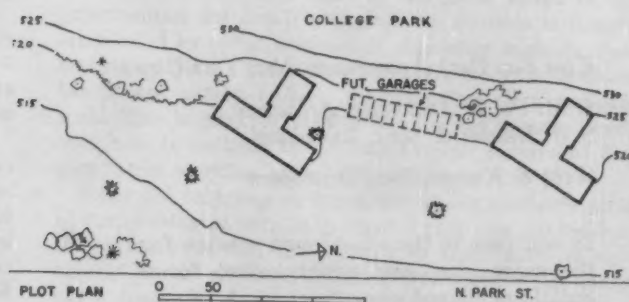
- | | | |
|---------------|--------------------|---------------|
| 1. Parking | 5. Shopping | 9. Ramp Down |
| 2. Driveway | 6. Plaza | 10. Arcade |
| 3. Ramp up | 7. Reflecting Pool | 11. Ramp Down |
| 4. Apartments | 8. Medical Suites | |



COLLEGE FACULTY HOUSING IN A



All photos by Joseph W. Molitor



*Dartmouth Faculty Apartments,
Hanover, New Hampshire*

E. H. & M. K. Hunter, Architects

*Trumbull Nelson Company
General Contractors*

In designing this attractive faculty housing for young members with growing families, the architects studied with particular care both the siting of the units and the specific needs of the tenants as individuals and as a group.

A nine-page questionnaire was distributed and several meetings were held to discuss the program; as a result, heavy emphasis was placed on children's play, storage of playthings, laundry facilities, noise isolation, and safe stairs.

WOODED SETTING

The site selected by the architects—after evaluating several—borders a college park, is convenient to classes, and is well situated for children's play. Based on a two-story maximum and a density of 5 families per acre, two buildings of 5 apartments each were located 170 ft apart and as far from the street as possible. The resulting wooded area around and between the structures provides privacy, sound insulation, and pleasant sylvan outlooks.

The plan features a central two-story entrance porch, serving as sound buffer and fire-break between apartments. At ground level, each building provides a protected play area with outdoor fireplace, flanked by individual storage cubicles for playthings.

The wood frame and brick buildings rise over grade-slabs. Since the convectors receive heat from the central college plant, basements could be eliminated.

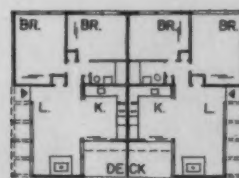




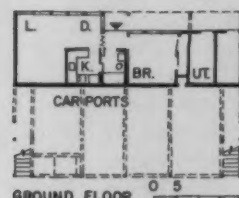
TWO-STORY TRIPLEX MAKES THE MOST



All photos by Roger Sturtevant



UPPER FLOOR



GROUND FLOOR

Apartment Building, Berkeley, Calif.

Roger Lee, Architect

*HsihHengWang, Structural Engineer
A. L. Muzzini, General Contractor*

In order to obtain maximum income from a corner plot containing apartments, the owner decided to develop a remaining piece at the rear in two-story units. This small area—60 ft wide and 50 ft deep—gives onto a side street. The neighborhood is an established one near the univer-



OF A SMALL PLOT

sity, and the architect was requested to enliven it by means of an interesting structure in which the units were to be small, informal, and compact—each having an outdoor living area.

City requirements for setbacks and parking made three units possible; the best orientation for privacy and sunshine was to the front or rear. Thus, sun-decks for the upper units were placed toward the front, while a patio-entrance terrace for the lower unit was placed at the rear.

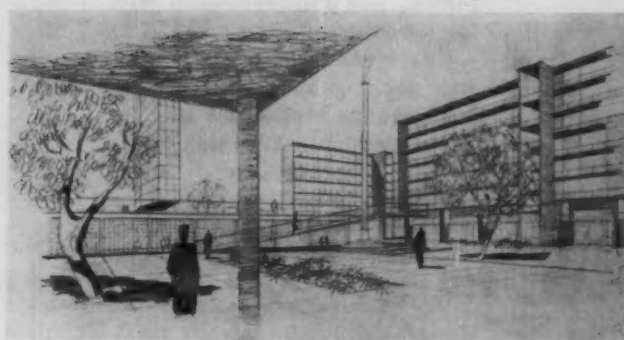
For the exterior, the redwood siding was stained reddish-beige, and the fascias, beams, posts, and trim were stained dark brown. Interior plywood walls are natural mahogany; sliding panels and kitchen appliances are yellow.

The structural frame, sash, and doors are wood, and the ceilings are exposed plank; floors are asphalt-cork tile; heating is by gas-fired wall furnaces.





3 DESIGNS LEADING TO A



THE FINAL PLAN increases density slightly, and places particular emphasis on relating the high office block to the south with the newly finished American Library across the canal

*A Neighborhood Housing Project
Mehringplatz, Berlin, Germany
For GEHAG Housing Company*

*The Architects Collaborative
Architects*

*In Charge:
Walter Gropius, Norman Fletcher*

Architect Walter Gropius says, "This project was designed for an almost completely bombed-out area in central Berlin, around the Mehringplatz. The 53-acre site lies between the recently completed American Library and a newly designed east-west thoroughfare.

"The project demanded careful urban study of the site and the areas about it. A density of 54

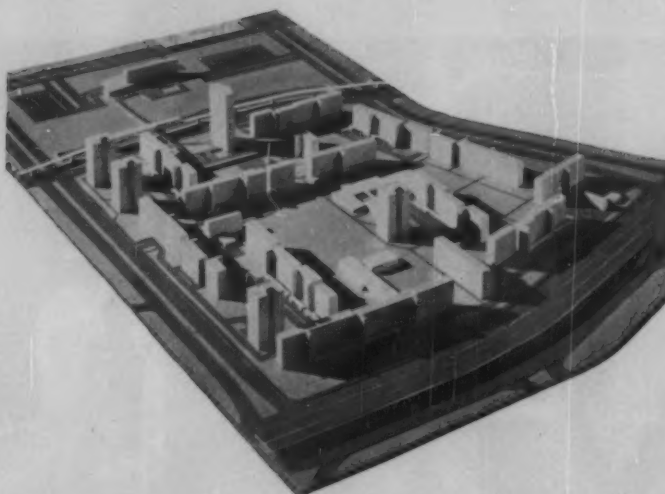
FINAL SOLUTION

families per acre was required, for a total of 2800 families. Slightly over \$4000 per unit was budgeted. The following types of living units were suggested:

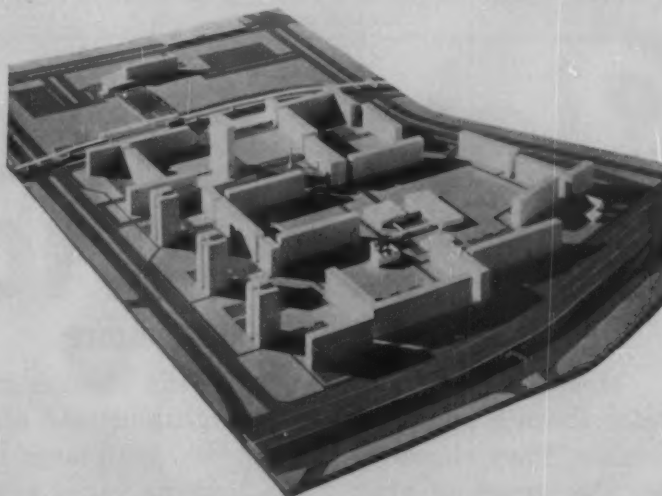
- a. 3-bedroom units, 8-floors high; 2 units per landing.
- b. 2-bedroom units, 8-floors high; open gallery access; one-family maisonettes in the first and second floors.
- c. 3-bedroom units, 3-floors high; walkup type.
- d. 1- & 2-bedroom units, 6 floors high; open gallery access
- e. 1-bedroom units, 8 floors high; open gallery access.

"Each scheme includes the elements necessary for a complete neighborhood: primary school, churches, shops, nursery, recreation areas, and parking areas.

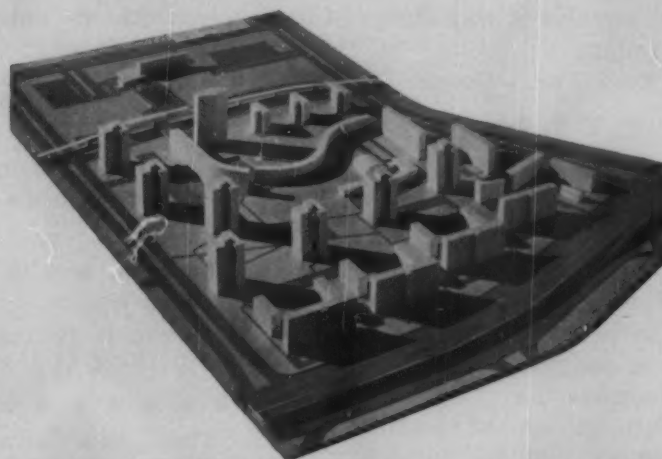
"Main traffic moves about the site on four sides, and the self-contained neighborhood thus encompassed is designed for unhampered pedestrian movement."



THE FIRST SCHEME disposes the buildings freely for variety of outdoor space without sacrificing in any respect sun infiltration



THE SECOND SCHEME interestingly relates the slab-like blocks in such a manner that a series of modified courtyards is created



THE THIRD SCHEME is more open in character. Here, the curved block is reminiscent of the round form of the old, historic Mehringplatz



In the eerie rain-softened glow of a street light, members of a teen-age gang meet to kill time or plan a "rumble."

THE SHOOK-UP GENERATION

By HARRISON E. SALISBURY

Most visitors to the Fort Greene Houses in Brooklyn prefer to walk up three or four flights instead of taking the elevator. They choose the steep, cold staircases rather than face the stench of stale urine that pervades the elevators.

Nowhere this side of Moscow are you likely to find public housing so closely duplicating the squalor it was designed to supplant.

The Fort Greene project

is described as the world's largest public housing project. It is also described as a \$20,000,000 slum.

In recent years two slayings have occurred on Fort Greene's doorstep—the "stomping" to death of an adolescent gang member and the fatal knifing of a sailor by teen-agers.

Low-rent public housing proj-

ects, the dreadful 100-year-old tenements of the lower East Side, the brownstone barrens of the upper West Side and the slum jungles of East Harlem are prime breeding places of the stresses, the strains that produce New York's "shook-up" generation.

Many New Yorkers have the comfortable feeling that slums are a thing of the past.

They spin along Gowanus Parkway and admire the neat rectangular buildings of Red Hook Houses.

they marvel at the new brick towers that fringe the litter of East Harlem's tenements.

What they do not know until their nostrils ferret out Fort Greene's fetid story or until they see the inside of some apartments at Marcy Houses or St. Nicholas Houses is that

the slums have merely been institutionalized.

The slums have been shut up within new brick and steel. The horror and deprivation have been immured behind those cold new walls

In a well-intended effort to solve one social ill the community succeeded in intensifying other evils and in creating new ones.

Admission to low-rent housing projects basically is controlled by income levels. Thus, these monstrous aggregates in which one family out of twenty in New York City now lives have tended to become new-style ghettos. Segregation is imposed not by religion or color but by the sharp knife of income or lack of income.

The able, rising families are constantly driven out as their incomes cross the ceiling figures.

In some housing projects a majority of families are on relief.

By screening applicants for low-rent apartments to eliminate those with even modest wages the new community is badly handicapped. It is deprived of the normal quota of human talents needed for self-organization, self-discipline and self-improvement. A human catchpool is formed that breeds social ills and requires endless outside assistance.

"Even a ghetto," notes the Rev. Jerry Oniki of the Church of the Master, "after it has remained a ghetto for a period of

time builds up its social structure and this makes for more stability, more leadership, more agencies for helping the solution of public problems."

But when slum clearance enters an area it does not merely rip out slatternly houses. It uproots the people. It tears out the churches. It destroys the local business man.

• • • • •
it manages the tight skein of community friendships and group relationships beyond repair.

• • • • •
This is a human revolution. But too often the social effects are ignored.

• • • • •
"Wherever you have great population mobility and disrupted population areas," reports Hugh Johnson, the director of street club work of the New York City Youth Board, "gangs spring up to replace the broken stability of the group. Wherever the pattern of life breaks down kids form gangs to give themselves a feeling of protection and stability."

• • • • •
Housing projects are rammed into one neighborhood after another. The primary concentration is on providing new walls, floors and ceilings at the cheapest possible cost. But the social consequences are by-passed.

Youth Board Experiences

Ralph Whelan, director of the New York City Youth Board, reports that experience shows that there is an invariable rise in delinquency rates in the first six to eighteen months of any new housing project.

Social scientists are convinced that most, if not all, destructive effects accompanying population changes can be avoided by proper planning, proper conditioning of the new populations and the old.

But such efforts are usually omitted or are carried on in so primitive and ineffectual a manner that, for example, children are permitted to turn the elevators of Fort Greene into public toilets.

The New York Times photo (by Allan Baum)

WHAT'S WRONG WITH PUBLIC HOUSING?

Disenchantment with public housing—already widespread—was jerked into sharp focus when the New York Times recently referred to city "housing jungles" as "prime breeding places" of social ills and juvenile delinquency.

Left: excerpts from the original article of March 26th.*

What Architects Think About Public Housing

A roundup of professional opinion on:

- How does delinquency relate to housing design?
- How can public housing be improved?

Comments are arranged alphabetically.

Wm. Stephen Allen: These are old social and economic ills that should be attacked on a broad field but not to the detriment of public housing, except that in doing so, public attention can be directed to the fact that we need more and better housing, not less.

Present public housing standards and concepts are woefully low. In the 30's . . . "public housers" . . . in order not to arouse the ire of real estate groups, etc., in launching their programs . . . concentrated on the most minimal housing and failed to provide the social necessities for a complete neighborhood. This grave omission has contributed to the problem Salisbury writes about.

An integrated social program should include health centers, nursing and baby-sitting arrangements, facilities for social and religious programs, playgrounds, lounges, green areas, etc. Furthermore, architects should be given greater latitude, so creative design with proper amenities such as decoration, sculptural quality, and bold planning can be achieved.

*One of a series of seven (March 24-30, 1953) comprising a report on juvenile delinquency entitled "The Shook-Up Generation." Reprints of the series are available from The New York Times for 10 cents. Author Harrison E. Salisbury is now at work on a book of the same title, soon to be published by Harper.



Photograph by The New York Times

Howard Barnstone, quoting **Marie McGuire**, executive director, San Antonio Housing Authority: It is a wonder to some local officials that architects will undertake its work. Initiative and ideas are discouraged. Any new approach is immediately questioned . . . and the Agency seems to put no value on this program's responsibility to assume leadership in housing design. This is a complete change from the early days . . . when top-flight planners were used to find solutions.

Some of this can be attributed to the barrage of lobby activity directed against the program . . . since the war's end. In Congress it is hard to get an operation for the hair-lipped stepchild even though it shows great potential if properly assisted. We need a re-appraisal—social, judicial, architectural. Lifting of standards is an educational job, and public housing has no educators, and so it has been all along.

Fred Bassetti: The only serious limitations are in certain unimaginative housing authorities and in the mediocre architects they employ. Get an enterprising and courageous executive director . . . he will hire architects known for serious and imaginative work . . . and together they will create projects stimulating and delightful to live in, endowed with all the necessities of healthy community life . . . integrated by one means or another into the total plan. An authority on top of its job will see that their new development becomes a living organism capable of sustaining healthy life and not a skeleton beginning to degenerate the moment it is occupied.

Dean Pietro Belluschi: The problems besetting our social groups are very complex; there is too much insecurity and too many fears in our . . . society. Low standards for public housing are only one element in our problem.

We cannot provide better standards for the subsidized low-income groups without undertaking the impossible task of subsidizing the middle-income group. Our economy is not strong enough for such massive subsidies, unless we should decide to divert the billions which now go into defense spending into improving human environment. This, of course, would be labeled as socialism, which we rightly shun.

Improvement in housing can come only in small, inadequate steps. Elimination of crime and delinquency will come more slowly, when education and social aims are given wider and deeper scope.

Richard M. Bennett: I think we architects might well examine the implication of our designs that reflect unsympathetic, rigid, "institutional" public housing complexes. Poverty is being memorialized in multi-million-dollar solutions where there is no reaching for warmth, compassion, joy, or love of fellow man except by an occasional, self-conscious piece of "decorative art."

Those now responsible for public housing should review their original objectives; for a job half done only makes matters worse. The purpose of public housing was never to create a new kind of poorhouse—an efficient institution which isolates the less privileged and productive, the ignorant, and the victims of forces beyond their control. The only reason for federal concern in the beginning was that all children should have a decent chance for development so that, in time, there would be less and less need for any public housing.

Robert Green for Caudill, Rowlett, Scott: We are interested in how architectural design may assist by improving the integration of social and economic adjustment. The present program is retarded by the machinery (red tape)

of government bureaus. Greater efficiency here would help—social adjustment through design can be achieved. Research is needed to develop methods for seeing that religious and social organizations become an integral part of public housing. The greatest contribution for the future can be made in this general area.

C. M. Deasy: Public housing criteria are too rigid to encourage design and planning ingenuity. They have led to dreary projects, particularly in high-rise developments. Much as we would like to feel that given a free hand, we could create an environment substantially improving group morale, I doubt that even the most inspired architecture could solve this complex problem.

The practical answer to Mr. Salisbury is the “no project” project—the program that disperses and integrates families within a community. It seems desirable to offer low-income families something more than shelter. Nonetheless, the problem is social—not architectural—and its solution must be sought in these terms.

Possibly remodeling older buildings for housing might be the most inconspicuous way of fitting low-income families into a neighborhood pattern.

Percival Goodman: First, it is an accepted fact that private enterprise cannot provide dwellings for three quarters of our population. Second, the problem of racial integration remains unsolved still. Third, it is universally agreed that the stratification due to rent laws is socially undesirable. Fourth, most will agree that good community spirit is more important than plumbing. Fifth, only the most backward believe that physical plan can be separate from social plan.

Jean Cocteau found his angel Heurtibise in an elevator. Salisbury found the stink of urine. Thus in the same physical plan may be found misery and/or delight.

Housing architects regard the work as shelter engineering, not architecture. A hard-boiled program is given them, to be translated into concrete and brick. The result can hardly be other than thoughtless, mechanical—a design by robots for robots. An architect cannot function effectively unless he is part of the program making. He is citizen prior to artist, artist prior to technician.

Back in 1942, brother Paul and I described a reasonable goal for housing, as follows: Providing necessary services causes the residents to become aware of their unity. Suppose they establish cooperative stores and management—as in Scandinavia. Neighborhood feeling begins; a political group with local interests forms, serves as intermediary with civic authority. An empty form is given content. Would not such a plan make an end to isolated schemes for housing?

Dean Olindo Grossi: Architects should be encouraged rather than limited. . . . It is nearly impossible to obtain approval for the refreshing kind of design that would improve the strait-jacket housing so prevalent. Esthetic achievements increase respect and dignity where grimness and sterile economy fail. Site overcrowding . . . has a tendency to degrade, causes serious management problems.

A larger number of disciplined families should be permitted to remain as their incomes rise; rents could be scaled to income. The possibility of long-term residence

would be an added incentive to good citizenship, both inside and outside the project.

I would recommend a construction program so that young residents would be inspired to participate in designing, laying out, and building community facilities, such as children's play yards, handball and basketball backstops, shelters, etc. In time, a maintenance and renewal program would develop, which would keep the young people busy and interest them in their community's future.

Henry Hill: The insensitive and arbitrary uprooting of people and placing them in bleak, crude buildings set in unusable open area is—to me—more inhuman than the slums that have been replaced.

It is a matter of the degree of badness, and a large share of the fault lies with the architect who is unwilling to stand on his convictions—or worse, simply has none. Officialdom's requirements certainly contribute to the incredible difficulties.

John MacLean Johansen: Relocation technique could be improved. Why not encourage the people of a neighborhood, working with a guidance agency, to examine plans and apartment layouts for the project being built and into which they might move? Through friendship, nationality, age groups, etc., they might work out a way to re-establish their neighborhood. This would give them a feeling of participation and assure continued social adjustment.

Standards and regulations—as written—permit inferior solutions and do not allow the architect enough design freedom so he can improve conditions. Our very best architects should be encouraged to apply themselves to low-cost housing problems. As it stands, they are not interested—and the restrictions explain why.

A. Quincy Jones, Jr.: It is unfortunate when projects are given to an architect to do as “so many units” on a piece of property. The design is then made without the proper teamwork between architect and professional advisors who would consider the *total problem*. The architect should play a large part in the initial programming. This is a serious community problem and obviously involves a great deal more than simply providing a new and initially clean place to live. Public housing solutions cannot be called “good design” until they are conceived in terms of a complete and workable community.

REFUGE FROM THE SLUMS: Uncomfortable or crowded out of their tenements, teen-agers find relaxation in a lounge maintained in the Bronx by the City Youth Board. Rival gangs may meet by chance in such places, but they are considered in neutral territory

The New York Times (by Allan Baum)





The New York Times

MORE OF THE SAME? The Fort Greene housing project in Brooklyn, which took the place of filthy shacks and hovels, has been described as a "\$20,000,000 slum," the new brick and steel serving only to hide the deprivation within. Limited as they are to families of lowest income, such slums have been found a factor in the nourishment of juvenile delinquency. Two killings have occurred near the church at left

George Fred Keck: I saw some New York City public housing recently; the construction looked shoddy and the density was simply appalling. In larger cities most projects end up with densities greater than the slums they replaced. In far too many cases we are building slums for the future that will have to be dealt with more drastically than we are now dealing with them—and in the not too distant future.

In most public housing planning is bad; no new ideas in the use of space or materials or structure appear. The endless regulations and specifications hamstring architects who might want to design something fresh and inspiring. Most architects know this and simply cannot generate much enthusiasm in the face of such negative conditions imposed by such monumental bureaucracy. Many of the best firms shy away from housing for exactly such reasons. Forced to design in the restrictive manner dictated, architects devise one (or maybe two) buildings which are repeated endlessly, giving the project a sort of barracks-like character. The current vogue regards this as the "cheapest" way—but any builder or architect knows this is utter nonsense.

Until the generally negative political attitude toward public housing (from Washington on down the line) is replaced by a forward-looking one, together with the determination to do a fine and creditable job for human beings, there will be no good public housing.

Lawrence B. Perkins: Public housing can be saved and made useful if its friends, and those who have forsaken it, will devise an approach large enough to consider the total needs of the publicly housed. It is pointless to continue using housing without question as a slum-clearance tool and stacking defeat floor on floor in antihuman towers. It is more to the point to view public housing as one of the several means of human rehabilitation and national improvement. The problem is an American family in need—not the disposition of real estate.

Cyrus F. Silling: The giddiness of Manhattan's heights and the squalor of its depths overwhelm me, and I am appalled by the myriad cliffs of apartment-filing-cases for human beings. How to improve moral and cultural stature in the commercial jungle this multiplicity of people generates is more than an architectural problem.

In early PHA years I measured its architectural and economic inhibitions upon architects and considered its bureaucracy. Contrasting life expectancy with recited load, I have not sought such work. If architects acted in unity to refuse such professional prostitution the public would require a better PHA result.

Fred N. Severud: The real solution must come from inside the people living in housing projects, and only from that direction can real results be obtained. It seems to me Salisbury has made no connection between physical environment and the ills he describes. I fail to see how modifications in planning and construction can greatly influence the deeply rooted ills that cause the degeneration of morals and integrity so rampant today.

If people can be educated to exercise the unselfishness and restraint community living entails, the problems will evaporate.

Wallace B. Cleland for Eberle Smith Associates: The debilitating effect of bleak and constricting housing, joyless in aspect and devoid of community foci, is not always measurable in crime statistics, but its message is written in humdrum lives. For every delinquent youngster, there are many chronically dispirited adults.

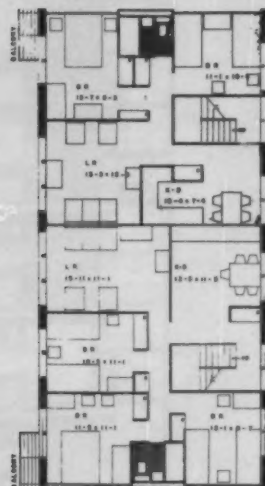
The most serious flaws in housing today stem from basic concepts. Among the unfortunate characteristics: densities four times what city planners consider a satisfactory maximum; too large projects that seem to make dramatic progress, while actually such heavy-handed tactics disrupt whole neighborhoods and create new ones lacking roots or stability; relentless standardization that is inhibiting both sociologically and architecturally; stratification by income has a deleterious effect on the self-respect and purposefulness of tenants; community facilities are ignored, thereby inviting trouble.

Subsidized housing alone is unable to solve a problem as tremendous as ours. Projects should include the cultural facilities required, and commercial ones as well. There is no reason housing should not be profit-making, or at least self-sustaining.

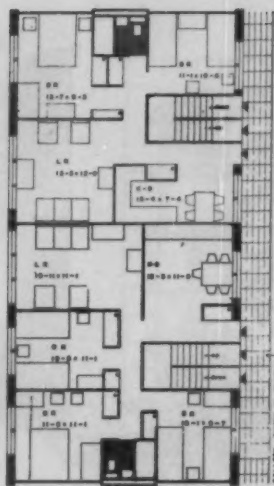
Broad-scale city planning as regards housing should be carefully considered—not ignored as at present. Certain industries and their workers should be relocated in fringe areas, leaving mostly light industry and commerce near the city heart. We must bring back to urban centers a less transient and more civic-minded populace. Innumerable families trapped in the dull, regimented developments that disfigure much of our countryside realize their situation is something less than the American dream, but settle where they are for lack of an acceptable alternate. Pilot models are needed to show them what really well designed urban housing could offer; and at all levels of government there should be a climate of encouragement for housing that not only shelters life, but enhances it as well.

Robert Law Weed: Personal experience leads me to believe that much of the indictment in this timely article is true. It seems to me that the success of low-cost and low-rent public housing must start with a broad program of education for the people who will occupy it.

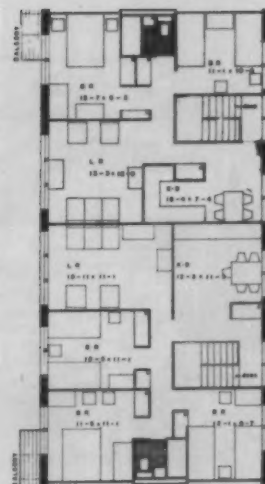
Paul Weidlinger: Our public housing is obviously in the wrong hands in terms of both planning and administration. Current concepts are based on the criterion of "minimum hardship to the real estate interests." Thus, no effort is made to consider and plan for the sociological implications of concentrating low-income families and disrupting natural social centers and community activities. This should be—and very likely is—obvious to your readers. The problem is not one of city planning or architecture but of politics.



PLAN BELOW GALLERY FLOOR



PLAN OF GALLERY FLOOR



PLAN ABOVE GALLERY FLOOR



SKIP-FLOOR ACCESS SAVES CUBAGE

*Borgia Butler Houses, Bronx, N. Y.
For The New York City Housing Authority*

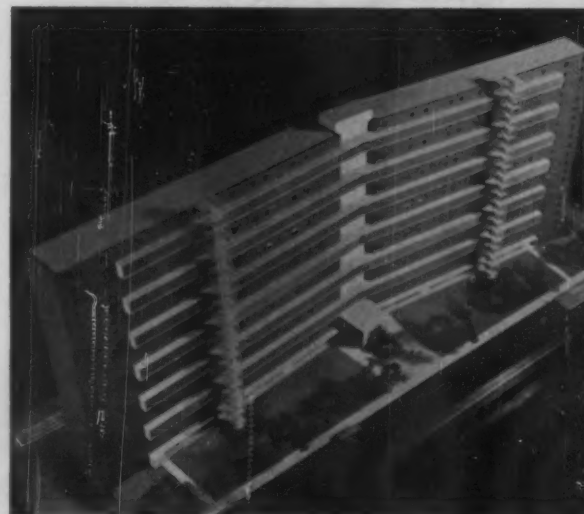
Joseph & Vladeck, Architects

Consultants

*Landscape: Joseph Gangemi & James Rose;
Site Development: Ralph Eberlin; Structural:
Weinberger, Freiman, Leichtman & Quinn;
Mechanical: Carlson & Sweatt*

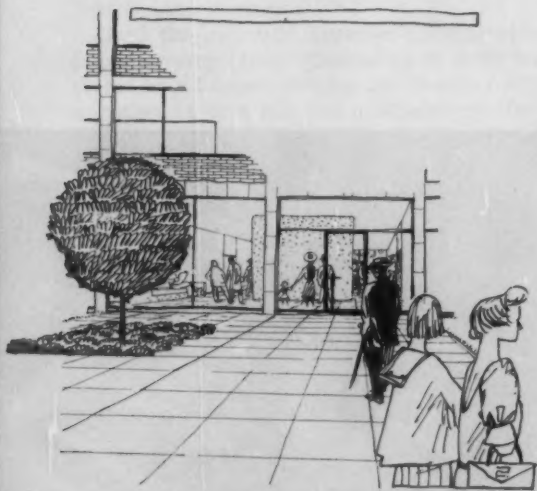
These high-rise units feature a "skip-floor and gallery" arrangement in which the elevators stop only at the middle floor of every three, with further circulation laterally by gallery or vertically by a private stair of one flight. Fire stairs are placed outside, connecting the cantilevered galleries.

The architects explain that the design materially reduces space usually devoted to halls and stairs; enables all apartments (oriented east-west) to have through ventilation; reduces the cost of the \$17 million project by one-quarter million.





NEW FACE FOR A LARGE AREA IN

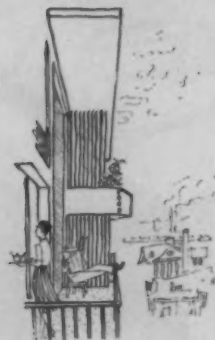


*The St. Louis Plaza Project
For The Urban Redevelopment Corp.
Of St. Louis*

*Hellmuth, Obata & Kassabaum
Architects & Harris Armstrong,
Architect*

Wm. C. E. Becker, Structural Engineer; John D. Falvey, Mechanical Engineer; Paul Tishman General Contractor, Inc., and Fruin-Colnon Construction Co., Joint General Contractors.

This large project—to provide 1090 apartments in six 13-story buildings at a total cost close to \$15 million—is now under construction in downtown St. Louis, only a few blocks from the main business section. Aimed at providing a new and more appealing



DOWNTOWN ST. LOUIS

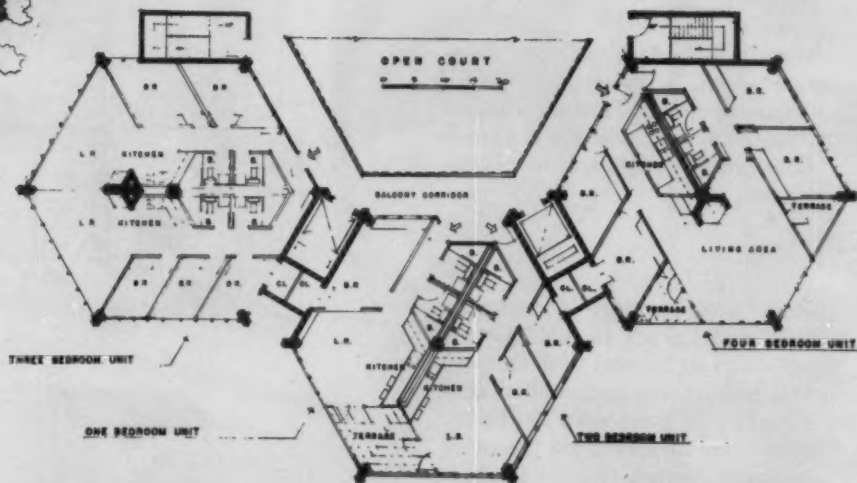
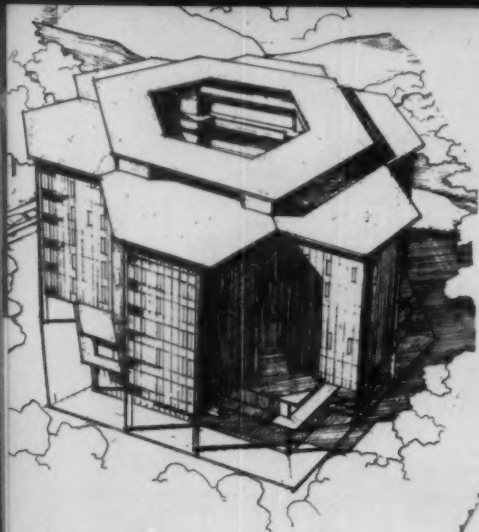
kind of urban living for those who *like* the city, it is designed to lure back to urbanity those who have deserted it for a suburban development that so often fails to measure up to the dream that originally sold it.

The two existing churches on the site will be appropriately landscaped and will remain as an integral part of the plan.

Balconies will add interest to the façades, and St. Louisans—who traditionally *use* their balconies—will find them of two sizes and shapes, alternated to provide an interesting exterior pattern—with metal railings and color.

Structural frames will be of reinforced concrete with flat slabs—the first such in that area. Interior columns are placed to conform to plan divisions; a skim coat of plaster will provide smooth soffits that can be left as is for painting.





UNIQUE KIND OF HOUSING IN THE OZARKS

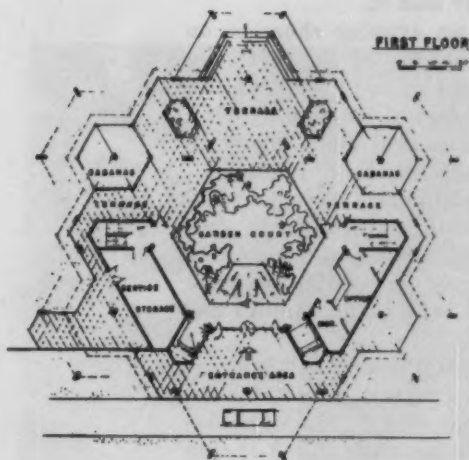
*Cooperative Hunting Lodge
In The Ozark Mountains*

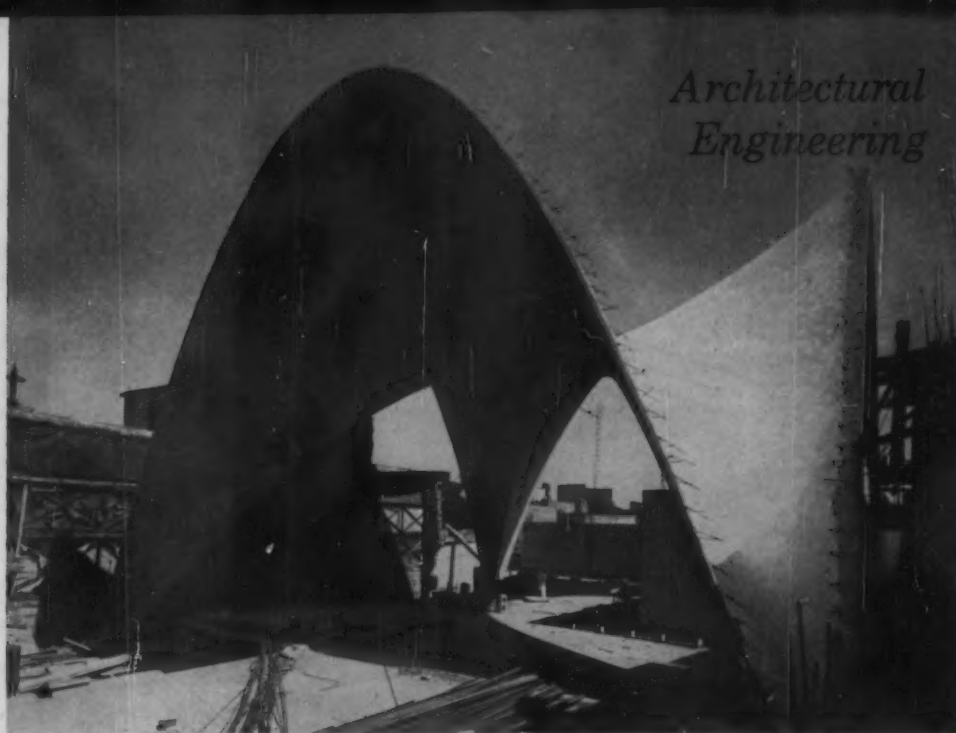
*Erhart, Eichenbaum, Rauch and Blass
Architects*

Situated on a long point of virgin forest land ending in a lake, this unique cooperative lodge is designed for a typical 20th century business need—expense account entertaining. The area boasts superb fishing and hunting; the site will be developed with boat docks, swimming areas, and a small golf course, with servants' quarters and garage nearby.

The open ground floor will house office and service only; the second floor club rooms and manager's suite; above, the hexagonal apartment units will be sold either as units or half-units. The plan suggests the variety of divisions possible for these.

The structural frame will be of concrete; the window wall of redwood and copper; air conditioning and heating units at each floor will be natural gas powered.





Church San Antonio de las Huertas, Mexico, D.F. Shows first of three groined vaults completed. No edge beams; bars at borders carry windows. With Enrique de la Mora, Architect.

All photos, Erwin Lang

UNDERSTANDING THE HYPERBOLIC PARABOLOID

By Felix Candela

"Of all the shapes we can give to a shell, the easiest and most practical to build is the hyperbolic paraboloid." With this as his thesis, Candela decrys the use of arbitrary shapes for structure and examines the logic of the h.p. in terms of "proper" structural behavior, simplicity of stress analysis and ease of construction. Part 1 summarizes basic shell action, types of shells, and defines the geometry of the hyperbolic paraboloid. Part 2 in August will present stress analysis for various types of hyperbolic paraboloids

The hyperbolic paraboloid is now a project type in design offices and school workshops across the world. It finds great favor with the architect, who sees it as an "exciting" new form. Too often, however, the projects using this shape are quite unbuildable. This is because of the prevalent conviction that absolutely any structure is possible. Nothing could be falser than this.* The modern architect is seldom able to undertake structural invention, based on mathematical and engineering considera-

tions, and it is not likely that he will become so, as building problems get even more subdivided and complex.

We might ask why the modern architect (heir to hundreds of years' tradition of utter disinterest in structural problems) should be so absorbed of late in constructive forms and their plastic expressiveness. Is he intrigued by the forces acting inside a structure, by the urge to discover what prevents it from collapsing? No, his enthusiasm has a more emotional basis. Space frames, hanging roofs and concrete shells are all legitimate prey in what is pronounced a move to humanize the arid, primitive idiom left to us by the pioneers. "Structuralism" is originality's new escape-valve.

The hyperbolic paraboloid has not escaped this climate of sensationalism. Its use in a few buildings of

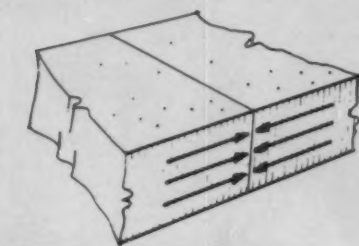
rare and unusual shape has helped to encourage a kind of collective fury to design extravagant and pseudo-structural forms. This naturally places the poor people whose mission is to calculate such structures in a very unhappy position.

It is forgotten that the paraboloid stemmed from purely functional and economic reasoning. I doubt very much that it can be the answer to any stylistic problems. But after the novelty of its shape has subsided perhaps it will be realized that the thin shell paraboloid has qualities as a building form that are far more persuasive than just esthetic considerations. I believe it is more practical to build than other concrete shells and much less rigid in its requirements. I am speaking of concrete shells since for the moment reinforced concrete is the basic construction material: it is cheap, easy to manipulate and available at nearly any location in the world.

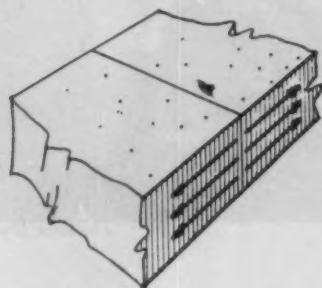
My purpose in this article is to try to explain the hyperbolic paraboloid, and by explaining, perhaps to defend it. For the architect or engineer who wishes to build the paraboloid must know the general conditions a shell structure has to satisfy, and he must

*These statements might be considered contradictory to some of my earlier writings. But I must explain again that my attacks against the excess of mathematical field trips referred mainly to the over-emphasis on elaborate "elastic" calculations, that is to the indiscriminate use of shadily based elastic hypotheses. I was not attacking a clear understanding of the play of stresses in a structure which can sometimes be pictured with accuracy by pure statics only.

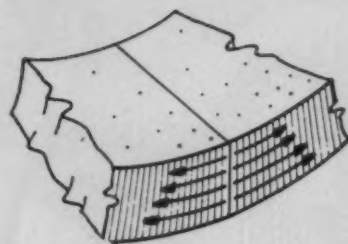
Figure 1: Membrane and Flexural Stresses



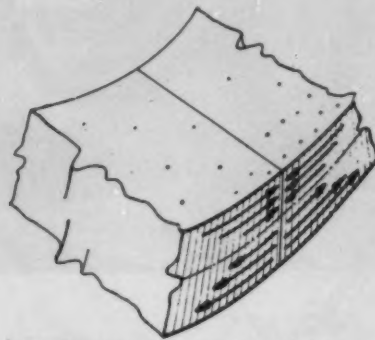
Compressive membrane stresses



Tensile membrane stresses



Flexural stresses in pure bending



Flexural stresses in combined bending

know how to calculate it, not only because building regulations may demand this, but for his own personal assurance. As far as can be ascertained, this information is not readily available to him now.

It might be wise now to define a shell structure. The word shell is commonly used to describe practically any kind of laminar structure, but a line must be drawn between "proper" and "improper" shells. The distinction is not only geometrical but directly relates to their structural behaviour. The designer of shell forms is restricted if he cannot see this distinction.

A laminar structure is one whose thickness is of a much smaller order of magnitude than its other two dimensions, but it cannot be considered a "proper" shell unless it is doubly-curved. The criterion of a "proper"

shell is the avoidance of bending stresses. A "proper" shell is a laminar structure which acts mainly by means of membrane or direct stresses. Membrane stresses are those equally distributed in the thickness of the slab and parallel to the tangential plane to the surface (Fig. 1). They can of course be tensile or compressive stresses.

An "improper" shell is a laminar structure in which an important part of the structural action is performed by bending of the slab. The limiting case of this is the ordinary flat slab which works exclusively in bending. A folded or prismatic slab is another "improper" shell in which part of the load is carried to the supports by direct stresses, but important bending moments exist nevertheless. In the barrel (or long cylindrical) vault the proportion of loads trans-

mitted by direct stresses is greater than in the folded slab, but transverse bending cannot be avoided. In both cases substantial thickness must be given to the slab in order to resist bending. The common (or short cylindrical) vault can work exclusively with direct stresses under certain distributions of loads whose pressure-line coincides with the form of the directrix or cross-section. This means it must be shaped to the funicular or pressure line of the permanent loads (Fig. 2). But with the intervention of accidental live loads the vault develops bending which must be taken at short intervals by means of stiffening ribs or substantial arches. In brief all these examples are *developable* or simply-curved surfaces which can only oppose change of shape or curvature by the bending resistance of the lamina itself. They are "improper" shells.

But compound surfaces, as most of nature's shells are shaped, can work (when properly supported) by direct stresses only, regardless of the distribution of loads upon them. Bending cannot appear until direct stresses reach a value very much in excess of the elastic limit. This is obvious when we try to crush a small dome of any practically non-extensible material such as concrete and compare the type of rupture with that resulting from pressure applied to a non-compound surface of similar material (Fig. 3).

There are two kinds of compound surfaces, synclastic and anticlastic. *Synclastic* or elliptical surfaces have both main curvatures in the same direction (as a dome). They are called elliptical for the type of equation representing them. They are "proper" shells which can and should be built as thin as practically possible, but they are expensive to form by ordinary methods since they require a considerable number of arches and the boards must be bent on top of these (Fig. 4, top). *Anticlastic* or hyperbolic surfaces have both main curvatures in an opposite direction (as a saddle) (Fig. 4, bottom). There are some anticlastic surfaces which can be generated by straight lines and which at the same time have a clear geometrical definition. They are called *rule* or *warped* surfaces, and are namely the conoid (which has only one system of straight generators), and the hyperboloid and the hyperbolic paraboloid (which each have two systems of straight generators) (Fig. 5). All three types are simpler to build than synclastic surfaces because they may be formed with straight boards and they share in common the mark of a

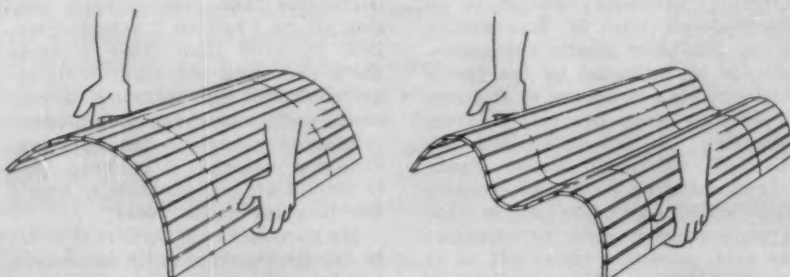


Figure 2: A thin (flexible) cylindrical shell can be maintained in a rather unstable equilibrium as long as its cross-section conforms to the pressure line of the external loads (left). Any slight changes in their distribution or in the shape of the cross-section of the lamina produces rupture by bending due to instability or buckling (right). To prevent this the cylinder must be stiffened by rigid arches or diaphragms

"proper" shell—the ability to avoid bending stresses. The conoid is the hardest to form of the three, since it requires a series of arches of differing rise before the boards can be placed. Besides, the conoid and the hyperboloid are restricted because of their difficult analysis.

But of all the shapes we can give to a shell, the easiest and most practical to build is the hyperbolic paraboloid. Like the conoid and the hyperboloid it is a doubly-curved or non-developable surface (and so can work with membrane stresses only), but it is the only warped surface with an equation simple enough to allow the calculation of its membrane stresses by plain, elementary mathematics.

This feature of the paraboloid, the comparative simplicity of its analysis, is most important. Resolving partial differential equations which are not directly integrable is still a very lengthy and cumbersome mathematical process. The average structural office finds this outside its range. Electronic computers and analogical machines are still not in popular use, and cost of their use for average projects is prohibitive. The construction industry itself is still quite unstandardized. The production lines of the automobile and aircraft industries enable them to spend huge sums on research and analysis of prototypes; but in building we keep on trying to work a different solution for each project, while knowing that the cost of analytical investigation must not exceed

Figure 3



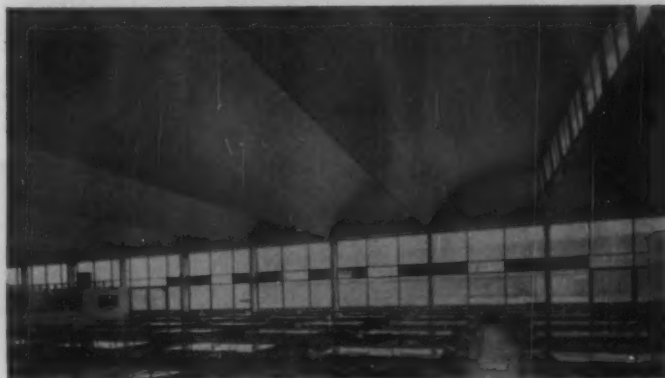
Rupture by bending of a non-compound laminar structure



Rupture by tension of a doubly-curved shell



SHORT CYLINDRICAL SHELL: Mexico City Customs Warehouse. Short shells, span 66 ft; 20 ft cantilever wing; ties above roof. With Carlos Recamier, Architect.



LONG CYLINDRICAL SHELL: Sawtooth arrangement over dining hall at Toyoda Factory, Irolo, Mexico; span 62 ft. With Masao Watanabe, Architect.



CONOID: Factory in Mexico, D.F. With Raul Fernandez, Architect.

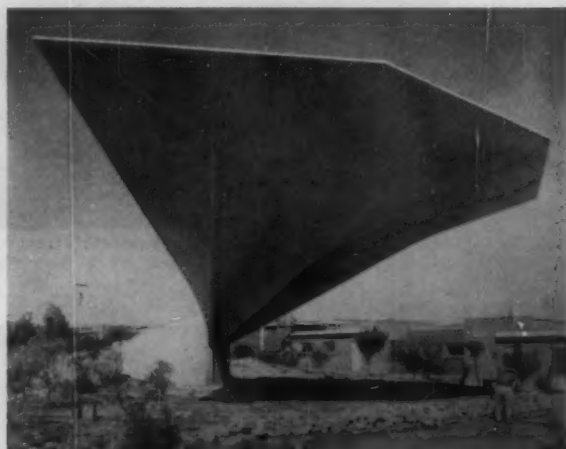


HYPERBOLIC PARABOLOID (Vertical axes): "El Leon" Confectionery Factory, Mexico, D.F. "Half-umbrellas" spanning 66 ft in sawtooth. Ties are necessary to take lateral thrusts



HYPERBOLIC PARABOLOID (Vertical axes): Herdez Factory, Mexico, D.F. Rectangular domes formed by 4 h. ps. Catwalk carries lighting and conceals ties. Span 52 by 52 ft. Vertical axis; limited by straight generators

Note: All shells shown have been designed by Felix Candela.

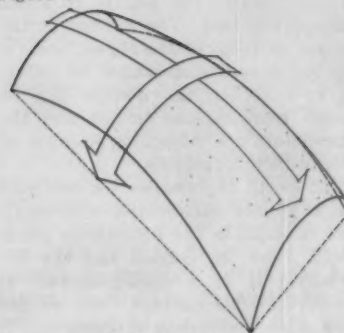


HYPERBOLIC PARABOLOID (Non-vertical axes): Bandshell, Santa Fe, Mexico, D.F. Six h. ps coupled at base to form 40 ft cantilever. Upper edges in tension, lower common edges forming groins in compression. With Mario Pani, Architect.

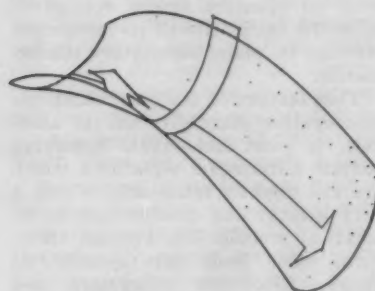


HYPERBOLIC PARABOLOID (Arbitrary curved boundary): Mexican Stock Exchange, Mexico, D.F. Groined vault on a rectangular plan. Edges are inclined for daylighting. Span 85 by 50 ft. With Enrique de la Mora, Architect.

Figure 4



Synclastic or elliptical surface

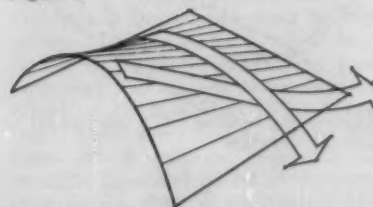


Anticlastic or hyperbolic surface

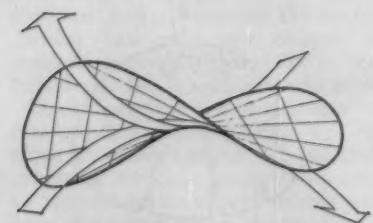
a small percentage of the total cost of the structure. Moreover as our reward for inventing a "Theory of Structures" we are now obliged to calculate everything we build and to justify it with numbers. This can be really discouraging to the adventurous mind. If we wish to surpass the pedantic pace of the building codes, we must defend our audacity with a formidable array of figures and equations.

Although the extent to which we can assess numerically the *real* behavior of a structure is rather hypo-

Figure 5



Conoid



Hyperbolic paraboloid

thetical, our mathematical elaborations have a certain value. They can give us a rough assurance that the structure will stand, after we have called on our experience and common sense to determine its form and dimensions.

Moreover when we analyze membrane stresses we are only using statics, and we do not have to assume anything about the elastic properties of the material. When the results of this analysis give us comparatively low value for the stresses, these will produce only negligible elongation or shrinking in the structure and we can be sure that the change of shape of the structure after such deformations will also be negligible. Therefore the theoretical investigation and the actual behavior of the structure must agree satisfactorily in our case, since the former is based on the abstract truths of logical statics, and not on any hypothetical simplifications of the material's physical properties.

The first requisite in understanding the behavior of the hyperbolic paraboloid is to define its surface. It is surprising how many designers are deficient in this primary consideration.

Surface Definition: Assume two straight nonparallel, nonintersecting lines $H O D$ and $A B C$ (Fig. 6) in space which will be provisionally named directrices. Straight lines h_n that intersect both directrices, being at the same time parallel to one plane xOz named *director plane*, define the surface. They will be called the *first system of generators*. The two directrices determine in their turn a second director plane yOz , parallel to them. The surface may also be considered as created by a *second system of generators* in parallel to this plane and intersecting every generator h_n of the first system.

The hyperbolic paraboloid contains, therefore, two systems of straight lines h_n and i_n , each system being parallel to a director plane and both planes forming an arbitrary angle ω . Every point of the surface is the intersection of two straight lines contained in the surface.

It is convenient to take as coordinate axes the two generators passing by the crown of the paraboloid and the paraboloid axis or intersection of both director planes, which is always normal to the plane of the other two axes. In these birectangular coordinates, the equation of the paraboloid will be

$$z = kxy$$

k being a constant which represents the *unitary slope or warping* of the paraboloid (in Fig. 6,

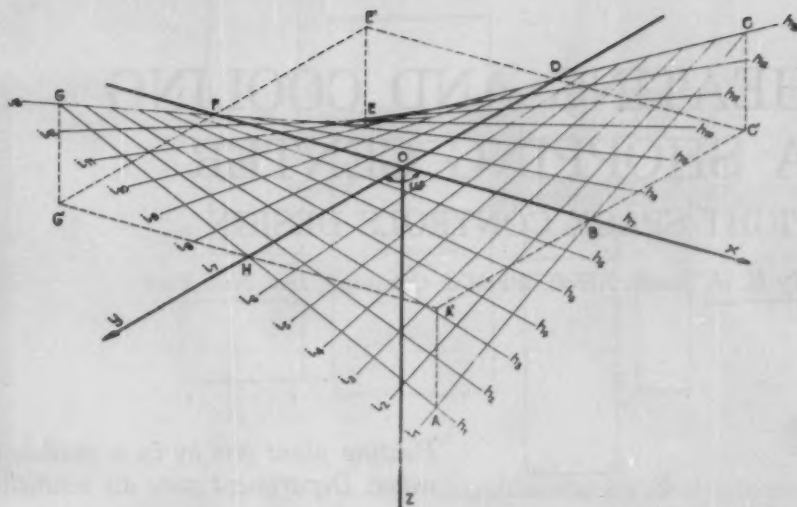


Figure 6: Hyperbolic paraboloid as formed by two systems of line generators

$$k = AA' (OB \cdot OH) ;$$

xOy can be any angle; xOz and yOz are right angles.

This is the *simplest possible equation* of second degree tying together the three coordinates of each point. When the director planes form a right angle ($\omega = 90^\circ$) the paraboloid is *equilateral* or *rectangular*. When ω is any other angle, the paraboloid is *oblique*. Plane sections parallel to the bisecting planes of the director dihedral angle xOy are parabolic. They are named *principal parabolas*, and are respectively curved upward ($G O C$) and downward ($A O E$); hence the surface is *anticlastic* or *inversely doubly-curved*. All other plane sections are hyperbolas, except those parallel to the z axis which are also parabolas and, of course, those parallel to the director planes which give the straight generators.

As a translation surface (Fig. 7) the paraboloid may be considered as generated by a principal parabola

$A B C$ that moves parallel to itself along an inverse principal parabola $B O F$. Therefore the surface has two systems of parabolic generators. Each system is composed of *identical* parabolas situated in parallel planes. All these well-known properties are very useful in the erection of forms.

Sometimes the designer may wish to arrange the surface in such a way that the z axis is not vertical. In this case the xy plane will not coincide with the horizontal plane and so the horizontal projections of the generators will not be parallel. The loads will have components along the three axes of the paraboloid. The analysis of this general case has never been published in a workable form. But no designer who wishes to venture beyond the limited cases of paraboloids with vertical axes and very flat surfaces can afford to be ignorant of it.

(To be continued in August.)

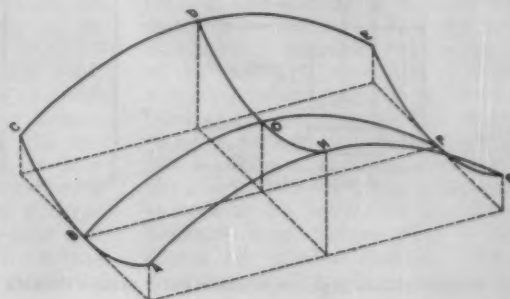


Figure 7: Hyperbolic paraboloid as limited by two principal parabolas

HEATING AND COOLING A SHOPPING CENTER

TIGHT SPACE CONTROLS DESIGN

By R. J. Bush, Abbott, Merkt & Company, Inc., New York

Heating plant gets by in a shallow basement using high temperature water. Department store air conditioning is tucked into a mezzanine.

In the early design stages of Garden State Plaza, a regional shopping center located in Paramus, New Jersey, economic studies showed that a centrally located heating and cooling plant, occupying as little rentable space as possible, would best fulfill the requirements. Esthetic demands made it necessary that the plant be as inconspicuous as possible. Among the economic considerations was the planned expansion of the center to sixteen major buildings on the 130 acre site with parking for 8000 automobiles.

Several heat generation methods were considered, including heat pumps, low pressure steam, high

pressure steam, combinations of the latter two, and high temperature water. Unavailability of well water ruled out the heat pump. Careful studies of both steam and hot water under various conditions of temperature and pressure led to the final adoption of high temperature water as the logical system for the following reasons:

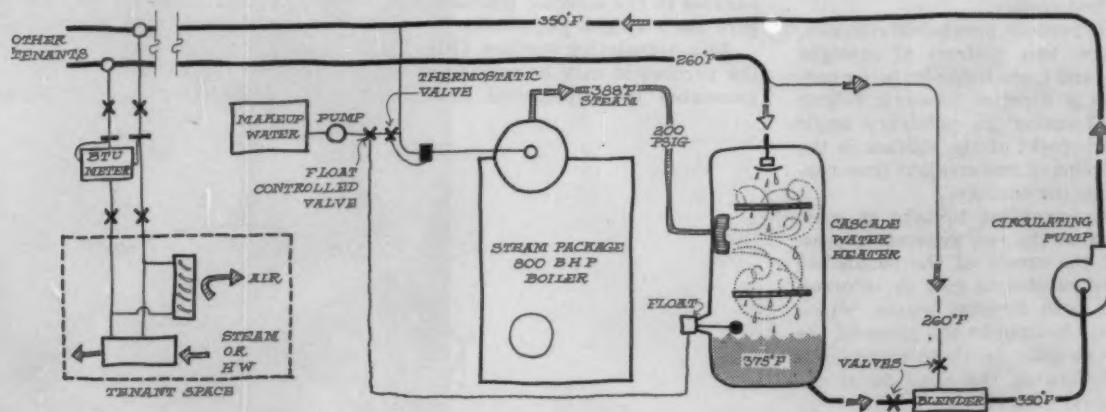
1. It offered the lowest initial cost as well as the lowest operating costs.
2. It utilized the smallest pipes for equal capacity.
3. It was the least affected by long horizontal runs to remote points at those elevations above or below that of the central plant.

4. It offered the ability to provide medium pressure steam (10 to 60 psi) for cooking or other process loads.

High Temperature Water

Several types and arrangements of boiler equipment can provide the required temperature and pressure for high temperature water. Water tube boilers and fire tube "scotch" boilers, both modified for forced circulation HTW are the most commonly used.

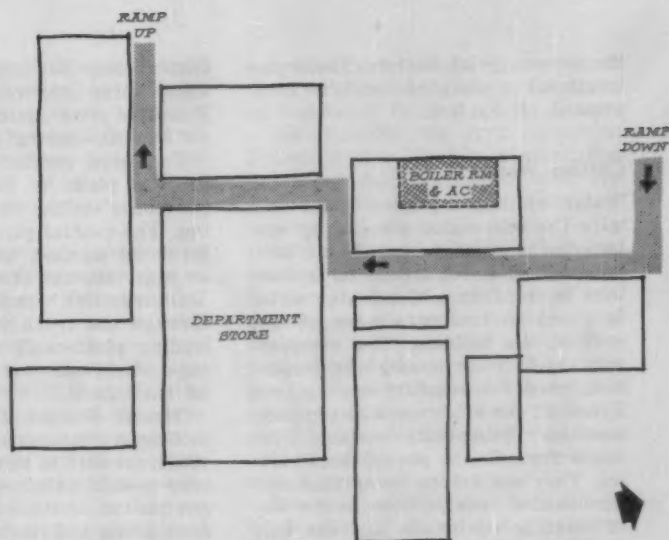
The scotch (or internal furnace type) popular as a low-capacity package steam generator, is compact and efficient. In case of pump failure



Two-stage, steam-to-high temperature water system showing water level control, high temperature blending and a typical tenant installation



Looking north along truck tunnel at heating plant loading dock; shows hot and cold mains along ceiling.



The first stage of planned construction involves nine out of the eventual 16 buildings. Underground it is all one building; the truck tunnel along the major axis serves as pipe chase for hot and cold water mains

natural circulation will set off temperature and pressure limit devices. There is however a potential danger from cold water return fracturing tube sheets unless proper blending connections are used. Water tube boilers with forced circulation have been used most frequently in large installations in the form of "La-Mont" or "Corner Tube" boilers. In both of these configurations the economizer section can be mounted behind the radiant surface, thus reducing headroom requirements.

The method of hot water production to be chosen was closely tied up with the characteristics of the space that was available for it. These characteristics were determined by the following site and planning requirements:

1. For economy in piping and distribution losses, the plant was to be located in the heart of the center as ultimately projected. For esthetic and economic reasons, the plant was to be located in the basement of an otherwise-rented building, out of the high revenue area and as far out of sight as possible. To these rather tight strictures was added the further fact that the ground water table was high enough in the area to limit the depth of excavation and thus the available headroom.

2. Because of the nature of the project, there would be a widely-varying heating load, estimated as 100 to 200 boiler hp in summer, up to 800 to 1700 bhp in winter in the first stage and a possible maximum of 3500 bhp with the project at full size.

3. In order to keep the cost of a

quality installation to a lower figure than that of individual heating plants in the tenant areas, the installation had to be simple and the accessories at a minimum.

The headroom limitations in item (1) above caused the most concern in that directly-heated water had finally to be ruled out, largely because of lack of space for a properly-placed expansion tank above boiler water level. A type of boiler that incorporates a steam drum as part of the boiler had to be rejected because of return water problems that would result in boiler water level difficulties when using a common return to several sizes and types of boiler. Condition (2) caused the designers to settle on a multiple-boiler scheme with four (ultimately six) boilers connected to one header.

The type of system finally chosen was determined by both cost and headroom limitations. For the larger, full-load boilers, economy and simplicity pointed to the use of water tube boilers, but as steam generators rather than as water heaters. The indirect method finally adopted was the only feasible method in the space allotted, and, in addition, an eminently practical system in its own right.

As shown in the schematic view, the heating system operates with four major components: the boilers, the heaters, the pumps, and the tenant systems. For the first of four planned stages of expansion, four boilers are used: one small package generator of the scotch fire-tube type which carries light loads during weekends and a good part of the

summer load, two 800 bhp boilers for winter loads, and an extra 800 bhp boiler for emergencies. All major components are duplicated because of the emergency needs of an installation such as this which has public utility responsibilities. The small boiler can be fired with gas as well as No. 6 bunker oil, as used in the other boilers. The gas is used in startup operation before the fuel oil is heated, and during lightly-loaded summer operation.

The boilers feed steam into a single header connected to two water heaters. These heaters are of the direct contact or "cascade" type. The water is then circulated by pumps through the tenant systems where it may be used to heat air directly, to heat water for secondary distribution to unit heaters, or to generate steam.

Operation of the total system has several interesting features. The main water circulation supply goes out at 350 F, the pressure being a nominal 200 psig. Steam from the boilers is injected into the cascade heaters where it is mixed with part of the return water, and gives up its sensible and latent heat to bring the water up to about 375 F. Pump suction takes it from the hot reservoir at the bottom of the heater through a mixing nozzle where it is blended with the remainder of the return water so that the pump output is at 350 F. Pump output goes two ways, the greater into the system, the lesser back to the boilers as feedwater. Leakage from valves, etc., is replaced by treated makeup water. Auxiliary equipment is confined to

the necessary oil heaters, feedwater treatment apparatus, and a compressed air system.

Chilled Water

Water chilling equipment for use with the cold water circulating system has a present capacity of 4500 tons with possible expansion to 9000 tons in the future. Condenser water is piped to cooling towers on the roof of the building. The compressors, said to be among the largest ever used for comfort cooling, use Freon 12 for efficiency and compactness and incorporate variable inlet vanes for efficient partial load service. They are driven by synchronous motors that require little in the way of starting equipment and can help in keeping the power factor of the

center close to unity. The chilled water going into the system is at 45 F and is pressurized by compressed air from the central system.

Tempered ventilating air for the heating plant is supplied from a penthouse on the roof of the building. The central plant is thoroughly insulated against leakage of sound or heat into the stores above.

Distribution mains are run through the truck tunnel (over the loading platforms) and in the ceilings of service corridors branching off the tunnel.

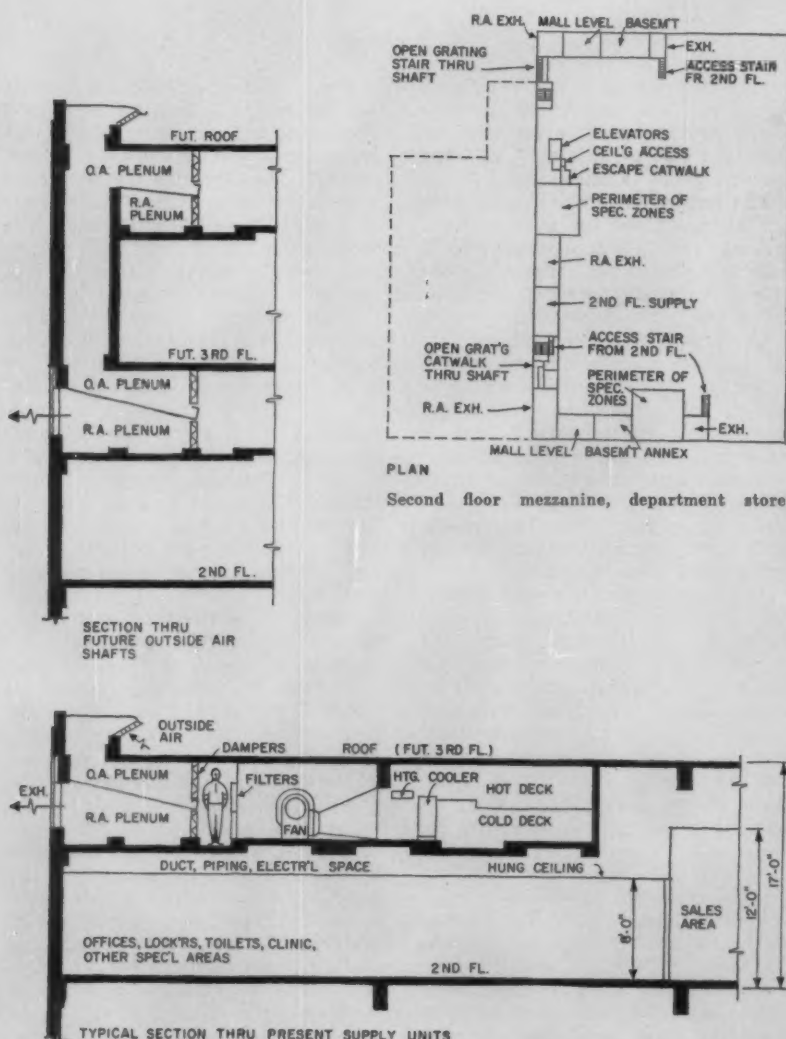
Tenant charges for heating and cooling are measured by Btu meters which are said to be the first of their type used in this country. Each tenant has two of these meters, one each for heating and cooling service. They measure the difference in tempera-

ture between the supply and return pipes, count the gallons of water circulated, and mechanically integrate the two to keep a count of Btu delivered or removed. An advantageous feature of these meters is that while using no outside power, they perform effectively at flow rates less than 5 per cent of maximum.

Department Store Air Conditioning

The largest tenant, a department store, set up rather stringent requirements for the placement of its heating and cooling machinery. In the design stages of the 340,000 sq ft building, stipulations were made that this somewhat bulky equipment could not occupy any usable floor space, could not interfere with the addition of a third floor, and could not be hung from the first floor ceiling. There was no room in the basement, which actually extended under part of a neighboring building and, of course, the possible third floor ruled out a penthouse. Room was finally made for the equipment in a mezzanine over that part of the second floor used for offices, beauty shops and other special spaces not requiring a high ceiling. This mezzanine, averaging 25 ft in width, extends half way around the perimeter of the building and contains outside and return air plenums, filters, fans, and heating and cooling coils totaling 690 and 763 sq ft face area respectively. There are five access stairways leading to the mezzanine, and the filter banks are arranged in a continuous corridor from one end of the floor to the other so that filters may be replaced without entering the sales floor. Air locks and doors are arranged so that service operations may be performed on fans and controls without wasting space. There are 25 supply fans and 11 return air and exhaust fans plus the 380-odd filters in this space.

With the fans so far from the ventilated space, as much as 600 ft in some cases, and the limited space available above hung ceilings, a high velocity air distribution system was mandatory. The air moves at 4000 to 5000 ft per min in some cases, roughly 50 mph. Specialty areas such as the offices and beauty shops previously mentioned made the zoning requirements so complex that a dual duct system was designed for them with cold air and hot air separated by an insulated membrane in the supply duct. Individual temperature controls were provided for each of the almost 100 special areas. The major sales areas are temperature controlled at the air handling units.



Mechanical mezzanine section, equipment for special area air conditioning.

HEATING, AIR CONDITIONING INDUSTRY ASKS FOR NEW LOOK AT AUTOMATIC CONTROLS

Participants in an All-Industry Control Conference held on May 14 at the ASHAE's Research Laboratory in Cleveland delved into the problems of establishing the relationship of controls to total system design, and came up with recommendations for research, better educational facilities, and coordination of available information on the control performance of system components and complete systems of heating, ventilating and air conditioning.

In describing the need for studying the overall concept of control, keynote speaker P. B. Gordon, Vice President of Wolff & Munier, Inc. and past president of the ASHAE, pointed out that controls today must be considered as part of a complex whole, rather than as separate entities, and that any attempt to examine problems related to their application must be made within the context of designing and operating a complete system. He went on to indicate that the increasing complexity

of the systems themselves, and rapid technological advances in controls and instrumentation, have combined to create a pressing need for an exchange of information between the various segments of the heating, ventilating and air conditioning industry.

This thesis was reinforced by a group of six panelists who explored in greater detail specific aspects of the total problem. Beginning with discussions of heat exchange apparatus, fluid flow control and the production of automatic controls, the panel moved on to present the viewpoints of the consultant-engineer, the contractor-user and the Society itself. Without exception, the speakers reiterated the need for further study of total system control and controllability. Much of the discussion centered around the problem of effectively controlling systems operating at less than full (design) capacity, and the lack of adequate information on how equipment will perform under the varying conditions encountered in normal system operation. A demand for standardi-

zation of terminology was also made by several members of the panel and in comments from the floor.

Significantly, the open discussion following the panel's presentation expressed full agreement with the stated need for a broader concept of control and its implications. Every member of the audience who commented on the problem stated that further study and research was necessary, and that manufacturers and designers must consider the interrelationship of the components of the mechanical system and their transient characteristics. Many industry participants also indicated a willingness to cooperate in an overall research program.

The conference panel included L. N. Hunter, National-U.S. Radiator Corporation; H. A. Lockhardt, Bell & Gossett Company; W. P. Chapman, Johnson Service Company; T. F. Rockwell, consulting engineer; E. R. Teske of the Heating, Piping & Air Conditioning Contractors' Chicago Association; and E. F. Snyder, Jr., Minneapolis-Honeywell Regulator Corporation.

PIER SLAB FOUNDATION SYSTEM PREVENTS FAILURES, CUTS CONSTRUCTION COSTS

A new ground slab design, "intermediate pier floor slab construction," offers an effective solution to the foundation problems encountered in areas where unstable soil may cause floating slabs to settle and crack. Developed by Edward L. Simpson, Chief Architect for the FHA's District of Columbia insuring office, the system will be covered in the new FHA Minimum Property Standards.

The principal difference between Simpson's design and conventional slab-on-ground construction is that the wire-reinforced concrete floor is a semi-structural slab supported by the foundation walls and intermediate piers rather than by the soil upon which it is poured. The savings result from the elimination of thorough and costly backfill compaction.

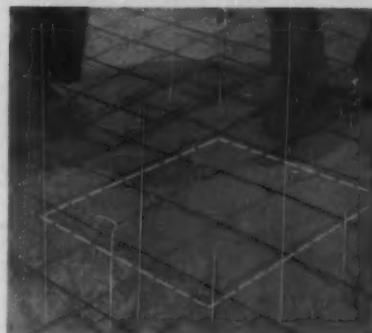
The first step in building an intermediate pier slab foundation is to run up footing walls in the usual way, and construct piers of the same height on 6 to 8 ft centers in each direction of the floor plan. The piers, which must have a minimum bearing area of 144 sq in., are usually built up of concrete block with the bottom course bearing in undisturbed soil. They may be capped with bricks and concrete to bring them up level with the underside of the floor slab. The

continued on page 214



Above: Cross-sectional view of typical intermediate pier slab systems shows (top to bottom) welded wire fabric, plastic vapor barrier, six inches of gravel, floor ducts and uncompacted backfill. A 4 in. reinforced slab will transmit loads to foundation edge walls and intermediate piers.

Right: White-outlined area shows top of 16 in. square pier below vapor barrier. Need for moisture barrier is shown by accumulation on underside of plastic film. A thermal barrier is also provided by air space created as backfill subsides after foundation has been poured.



Technical Roundup

uncompacted backfill is then placed to within 6 in. of the tops of the piers, and topped with a 6 in. layer of gravel. A vapor barrier and wire fabric reinforcement go over the gravel, and the "form" is ready to receive the concrete.

One of the problems considered by Simpson and his staff in the search for a more satisfactory, slab-on-

ground design was that of maintaining a thermal and vapor barrier under the slab. With the pier-supported slab, a thermal barrier is provided by the natural compaction of the loose fill after the concrete sets. The sealed air pocket opened up between the fill and the underside of the slab acts as a natural insulator, resulting in a slab that is warmer and dryer

than one in intimate contact with the sub-soil.

Houses built with the intermediate pier slab system most often use a trussed roof since the slab alone will not carry load bearing walls. Where bearing partitions are desired, a foundation wall must be built or a ground beam incorporated in the slab.

RESEARCH SHOWS NEED FOR STEP-UP IN RECOMMENDED LIGHTING LEVELS

A new, more accurate method of determining lighting levels required for specific seeing tasks indicates that current standards may be in for drastic revisions—in most cases, upward. The result of an eight-year study conducted at the Vision Research Laboratories of the University of Michigan, the evaluation technique was introduced to lighting specialists—including members of many I. E. S. technical committees—at a research symposium sponsored by the Illuminating Engineering Research Institute. Before the meeting closed, a recommendation had been made to use the system in establishing footcandle levels for a revision

of the *IES Lighting Handbook*.

The research that promises to have such impact on the status quo of lighting practice began in 1950 with a series of studies to establish how accurately subjects could determine the presence of "targets" designed to simulate seeing tasks of various degrees of difficulty. The data collected became the cornerstone of a system based on the fact that identical amounts of light are required to perform visual tasks of equal difficulty. To relate this basic data to any given seeing task, Dr. H. R. Blackwell, director of the Michigan Laboratories, developed an optical instrument called the Visual Task Evaluator, or VTE. This device makes it possible to determine the lighting requirements for any

task by viewing it at threshold and matching it to a test object of known lighting requirements.

Representative of the range of necessary lighting modifications indicated by the new measuring technique are the following:

For desk-level illumination for an accountant, an increase from the presently-recommended 50 footcandles to a minimum of 150;

For school tasks involving writing with soft lead pencils, an increase from 30 to 60 footcandles;

For the work area of a draftsman, a fourfold increase over present recommendations—from 50 to 200 footcandles;

For secretarial work, a 50 to 150 per cent increase over the presently-recommended 40 footcandles.

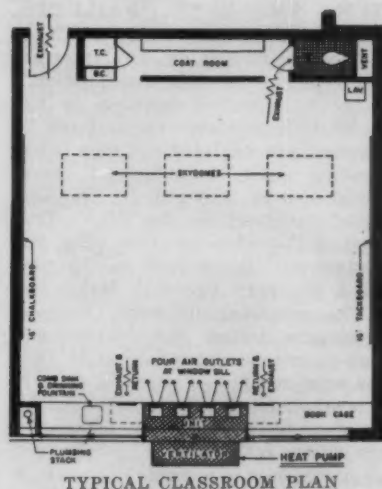
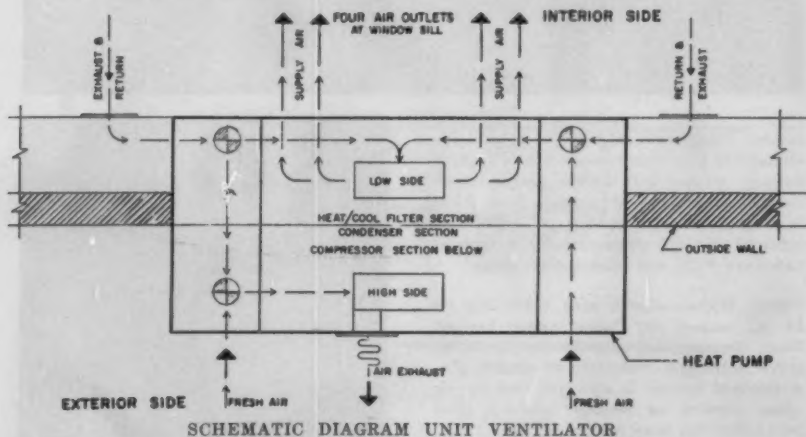
HEAT PUMPS GIVE VIRGINIA SCHOOL LOW COST HEATING, BONUS AIR COOLING

By using heat pumps in each of thirty-seven classrooms at the John B. Cary school in Hampton, Va., architects William, Coile & Blanchard and Associates were able to save an estimated \$6000 in heating costs and add summer air cooling as a dividend.

Although the program called for heating alone, comparative estimates revealed that the heat pumps could be operated year round at a cost less than that of conventional heating with steam convectors, thus making it possible to use the school facilities

during off-school months at no additional cost. The economy of the system is based on the relative prices of fuel oil and electricity in the Hampton area. Number 2 fuel oil, available to the local school board at 12.3 cents per gallon, has an average calorific value of 140,000 Btu, based on 70 per cent operating efficiency. This will produce 7960 Btu of useful heating per one cent cost. A reverse cycle refrigeration system operating at 15 degree outdoor temperature will, on the other hand, produce 10,000 Btu per one cent cost, at the municipal rate of 1¢ per Kwh.

more roundup on page 214



Above: Use of heat pumps at exterior walls of John B. Cary School eliminated two windows in each classroom, made expensive ductwork unnecessary

Left: Schematic diagram of air to air heat pump shows unit ventilator operation. Estimates indicated that heat pumps would give year-round air conditioning at less cost than conventional heating alone

Flexible, High Strength Raised Floors for Computers, Heavy Equipment

The commercial use of computers and similar equipment can pose unique problems in designing areas to house them. The machines are heavy. They require extensive, easily accessible services. Ideally, it should be possible to relocate them at will. One answer seems to be a raised floor that can be installed over any subfloor, will carry loads of over 200 psf, permit complete freedom in placing cables and ducts, and give the desired flexibility in arranging and rearranging the equipment.

TILE-SURFACED ALUMINUM SANDWICH

The *Bel Air* raised panel floor meets the stiff requirements for computer installations by combining a grid framework on slim adjustable pedestals with modular 2 by 4 ft panels made up of an aluminum honey comb core sandwiched between a steel base and a tile face. The pedestals, which are normally located on two foot centers, are fastened to the subfloor and the grid attached to them with machine screws. After final leveling, they are fixed in position by lock nuts. Ductwork can be laid after the pedestals are set and before the panels are placed; cutouts for cables or registers can be made anywhere in the panels, during or after installation, without adding supports.

The panels themselves fit tightly over the grid sans binding strips, fasteners—or cracks. Completely removable and interchangeable, they may be easily lifted for access to cables and services below, and shifted periodically for more uniform wear. In instances where the raised floor is used as a plenum chamber, the core acts as a natural insulation.

Because the system will distribute heavy surface loads without adding noticeable unit weight to the structure, existing structural arrangements can be used without expensive alterations, and new construction need not be over-designed to provide for computer areas. *Bel-Air Industries, Inc., Bel Air, Md.*

STEEL-FRAMED CAST ALUMINUM PLATES

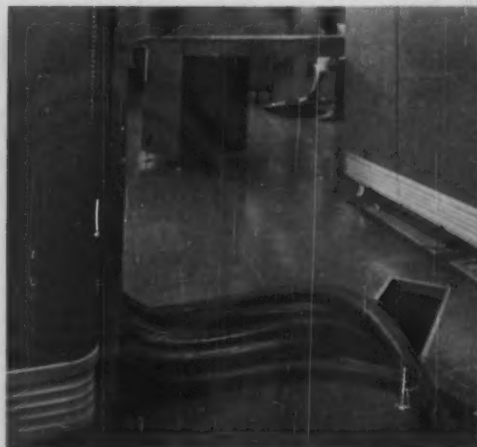
A similar raised floor, the *Floating Floor*, is laid down by assembling 36½ by 36½ in. modules which rest on adjustable pedestals. Each module contains four ½ in. thick cast aluminum plates placed in a steel frame. Like the *Bel Air* floor, the *Floating Floor* system is completely interchangeable and requires no supporting substructure. However, the pedestals, instead of being bolted down, are simply set freely on the subfloor so that the floor can easily be moved to a new location.

Each pedestal used in the *Floating Floor* supports a corner of four different modules which are slipped into place over the pedestal. The pedestal heads (see photo at right) are so designed that the modules are self-locking and need no adjustment

or tightening. Dually adjustable, they can be raised or lowered to compensate for unevenness in the subfloor, or to provide more or less space between the raised panels and the subfloor below.

Access to the subfloor area is obtained by lifting out either a single aluminum plate or an entire module, depending on whether an 18 by 18 or 36 by 36 in. opening is required. Cutouts can be made in the individual floor plates to provide for the installation of cables or air registers, and the plates and frames can also be cut to fit flush against walls and columns. Any standard flooring material may be used for the finished floor surface. *Floating Floors, Inc., New York, N. Y.*

more products on page 226



Rigid sandwich construction of *Bel Air* panel permits cutouts to be made wherever needed



Panels are removed with vacuum-grip, floor is leveled by adjusting pedestal height



Aluminum *Floating Floor* plates are set in module frame, covered with standard flooring

Building Products Literature Competition

Results of the Tenth Annual Building Products Literature Competition have been announced by its co-sponsors, the American Institute of Architects and the Producers' Council. The competition, which annually recognizes product literature of outstanding value to architects, was judged by Paul Schell, A.I.A., Pittsburgh, Pa., Chairman; Howard L. Cheney, F.A.I.A., Chicago, Ill.; Howard G. Hall, A.I.A., Baltimore, Md.; Harry B. Tour, A.I.A., Knoxville, Tenn.; and Robert Law Weed, A.I.A., Miami, Fla. The awards (listed below) will be presented at the A.I.A.'s 90th Annual Convention in Cleveland, Ohio.

CLASS I

Literature concerned primarily with basic technical information

CERTIFICATE OF EXCEPTIONAL MERIT

KAWNEER REFERENCE BOOK, Kawneer Co.; PERLITE DESIGN MANUAL, Perlite Institute

CERTIFICATE OF MERIT

SOUND ABSORPTION COEFFICIENTS, Acoustical Materials Association; MANUAL OF CONTROL FOR COMMERCIAL AIR CONDITIONING, Minneapolis-Honeywell Regulator Co.; ALCOA ALUMINUM IN ARCHITECTURE, Aluminum Company of America; CONCRETE MASONRY FOUNDATION WALLS, National Concrete Masonry Assn.; STRUCTURAL FACING TILE, Facing Tile Institute, affiliated with Structural Clay Products Inst.; ARCHITECTURAL WOODWORK, Architectural Woodwork Institute, James Arkin, A.I.A., Editorial Consultant

HONORABLE MENTION

PORCELAIN ENAMEL IN ARCHITECTURE, Architectural Div., Porcelain Enamel Institute

CLASS II

Literature offering technical information confined to particular products of a single manufacturer

CERTIFICATE OF EXCEPTIONAL MERIT

ARMSTRONG FLOORS, Technical Data, Armstrong Cork Co.

CERTIFICATE OF MERIT

ANEMOSTAT SELECTION MANUAL, Anemostat Corporation of America, Michel-Cather, Inc., Advertising Agency; SLOAN FLUSH VALVES, Sloan Valve Co.; BLUMCRAFT ALUMINUM RAILING CATALOGUE, Blumcraft of Pittsburgh; BARRETT ARCHITECTS' AND ENGINEERS' REFERENCE MANUAL, Barrett Div., Allied Chemical Corp.; KOPPERS BUILT-UP ROOFING—SPECIFICATION MANUAL, Koppers Company, Inc., Marsteller, Rickard, Gebhardt & Reed, Advertising Agency; ALCOA ALUMINUM ROOFING AND

SIDING PRODUCTS, Aluminum Company of America; ADLAKE ALUMINUM WINDOWS, The Adams & Westlake Co.; TRUSCON METAL WINDOWS & DOORS, Truscon Steel Div., Republic Steel Corp.

HONORABLE MENTION

ACOUSTICAL CEILINGS, Armstrong Cork Co.; SANYMETAL TOILET COMPARTMENTS, The Sanymetal Products Co., Inc., The Lee Donnelley Co., Advertising Agency; PRODUCTS FOR CONSTRUCTION, Minnesota Mining & Manufacturing Co.; CERAMIC TILE BOOKLET 208, American-Olean Tile Co.; Arndt, Preston, Chapin, Lamb & Keen, Inc., Advertising Agency; HERMOSA GLAZED CERAMIC TILE HANDBOOK H-102, Gladding, McBean & Co.; MOSAIC CERAMIC TILE WORKBOOK FOR ARCHITECTS, The Mosaic Tile Co., Farson, Huff & Northlich, Inc., Advertising Agency; MILLS METAL TOILET COMPARTMENTS, Mills Metal Company; LCN DOOR CLOSERS, LCN Closers, Inc. D. K. Morrison, Advertising Agency.

CLASS III

Literature of primarily promotional character

A SPECIAL CERTIFICATE OF EXCEPTIONAL MERIT

EXCERPTS FROM THE AIA CENTENNIAL CONCERT "MUSIC AND ARCHITECTURE IN THE ENVIRONMENT OF MAN", Structural Clay Products Institute & Affiliates

CERTIFICATE OF EXCEPTIONAL MERIT

WALLS OF STEEL, United States Steel Corp.; Batten, Barton, Durstine & Osborn, Inc., Advertising Agency

CERTIFICATE OF MERIT

ARCHITECTURAL ALODINE PROCESS, American Chemical Paint Co., Gray & Rogers, Advertising Agency; ARCHITECTURAL DESIGN WITH PORCELAIN ENAMEL, Armco Steel Corp.; PRIZE WINNING DESIGNS, National Association of Architectural Metal Manufacturers; GEORGE NELSON SKETCHBOOK, United States Gypsum, Fulton, Morrissey Co., Advertising Agency; FACTS AND FIGURES TO

HELP ARCHITECTS, Natural Gas Companies, Ketchum, MacLeod & Grove, Inc., Advertising Agency; FORMICA WORKBOOK, Formica Corp., Perry Brown, Inc., Advertising Agency; GARDEN REDWOOD, California Redwood Assn.; ARMSTRONG VINYL WALL TILE, Armstrong Cork Co.; THE STRONGHOLD LINE (A sample board of nails), Independent Nail & Packing Co., Warner Alden Morse, Advertising Agency

HONORABLE MENTION

ROMANY SPARTAN PANELS, Ceramic Tile Panels, Inc., The Griswold-Eshleman Co., Advertising Agency; PARAFLO, Day-Brite Lighting, Inc.; MODERN LIGHTING TECHNIQUES BY CURTIS, Curtis Lighting, Inc.; HORIZON INTERIOR WALL SYSTEM, The E. F. Hauserman Co., Mel-drum & Fewsmith, Advertising Agency; CARTHAGE MARBLE, Carthage Marble Corp.; METAL LATH, Wheeling Corrugating Co.; WELDWOOD FLEXWOOD, United States Plywood Corp.; RODDIS ARCHITECTURAL PLYWOODS, Roddis Plywood Corp.; ARKETEX CERAMIC GLAZED STRUCTURAL TILE, Arketex Ceramic Corp., Caldwell, Larking & Sidener-VanRiper, Inc., Advertising Agency; TIM-PRESS, Timber Structures, Inc., Arthur E. Smith, Advertising Agency

CLASS IV

Space advertising directed primarily to the architect

CERTIFICATE OF EXCEPTIONAL MERIT

CURTAIN WALLS OF STEEL OR ALUMINUM, Fenestra Inc., Fuller & Smith & Ross, Inc., Advertising Agency; ALUMINUM CURTAIN WALLS, Aluminum Company of America

CERTIFICATE OF MERIT

TOMORROW'S DESIGN, Universal Atlas Cement Co.; MODERN DOOR CONTROL, LCN Closers, Inc., D. K. Morrison, Advertising Agency; YOU'LL ALWAYS BE PROUD, Marble Institute of America, Moore & Co., Advertising Agency; CALIFORNIA REDWOOD, California Redwood Assn.; U.S. STEELS FOR ARCHITECTURAL DESIGNS, United States Steel
more literature on page 250

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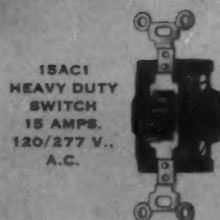
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Some of the P&S Devices
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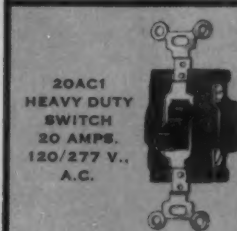
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MAKE THE COMPLETE JOB COMPLETELY P&S

RESIDENTIAL SWIMMING POOLS: 1

Minimum Standards prepared by the National Swimming Pool Institute

The technical data presented here gives basic requirements for residential swimming pool design, systems and equipment. It is intended by the NSPI to serve as recommended minimum standards and not as a model code. Similar standards for semi-public and public pools have been proposed.

DEFINITIONS AND NOMENCLATURE

1. Swimming Pool—Any constructed pool, used for swimming or bathing over 24 in. in depth, or with a surface area exceeding 250 sq ft.

2. Residential Swimming Pool—Any constructed pool which is used, or intended to be used, as a swimming pool in connection with a single family residence.

3. Main Outlet—The outlet(s) at the deep portion of the pool through which the main flow of water leaves the pool.

4. Main Suction—The line connecting the main outlet to the pump suction.

5. Vacuum Fitting—The fitting in the wall of the pool which is used as an outlet for connecting the underwater suction cleaning equipment.

6. Vacuum Piping—The piping which connects the vacuum fitting to the pump suction.

7. Return Piping—The piping which carries the filtered water from the filter to the pool.

8. Inlet—The fitting or opening through which water enters the pool.

9. Face Piping—The piping with all valves and fittings which is used to connect the filter system together as a unit.

10. Recirculating Piping—The piping from the pool to the filter and return to the

pool, through which the water circulates.

11. Backwash Piping—The piping which extends from the backwash outlet of the filters to its terminus at the point of disposal.

12. Receptor—An approved fixture or device of such material, shape and capacity as to adequately receive the discharge from indirect waste piping, so constructed and located as to be readily cleaned.

13. Filter—Any material or apparatus by which water is clarified.

14. Underdrain—An appurtenance at the bottom of the filter to assure equal distribution of water through the filter media.

15. Filter Element—that part of a filter device which retains the filter media.

16. Recirculating Skimmer—A device connected with the pump suction used to skim the pool over a self-adjusting weir and return the water to the pool through the filter.

17. Overflow Gutter—A trough in the wall of the pool which may be used for overflow and to skim the pool surface.

18. Filter Media—The fine material which entraps the suspended particles.

19. Filter Sand—A type of filter media.

20. Filter Rock—Graded rock and gravel used to support filter sand.

21. Pool Depths—The distance between the floor of the pool and the maximum operating level when pool is in use.

22. Pool Decks—The paved area around the pool.

23. Width and Length—Shall be determined by actual water dimensions.

24. Lifeline Anchors—Rings in wall of pool at transition point between shallow and deep area.

CONSTRUCTION

The design and construction, as well as all equipment and materials, shall comply with the following requirements:

1. Structural Design—The pool structure shall be engineered and designed to withstand the expected forces to which it will be subjected.

2. Wall Slopes—To a depth of 5 ft from the top, the wall slope shall not be more than 1 ft horizontal in 5 ft vertical.

3. Floor Slopes—The slope of the floor in the shallow end shall not exceed 1 ft vertical to 7 ft horizontal. The transition point between shallow and deep water shall not be less than 4½ or more than 5 ft deep.

4. Lifeline Anchors—Provide recessed lifeline anchor in wall of pool at transition point between shallow and deep area.

5. Diving Area—Minimum depths and distances shall be as shown in table below.

DIVING AREA—MINIMUM DEPTHS AND DISTANCES

Diving Boards	Maximum Distance Above Water, in.	Minimum Depth, ft	Distance from Diving Wall, ft	Distance from Deep Point to Transition Point, ft	Minimum Overhang, ft	Minimum Width to Center of Board, ft
Deck Level	18	8	10	10	2½	7
Residential	30	8	11	11	2½	7½
1 meter	39.37	8½	12	12	3	8



Inland Steel Building, Chicago, Illinois

Architects and Engineers:
Skidmore, Owings & Merrill, Chicago.
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B&G EQUIPMENT INSTALLED FOR HEATING...SNOW MELTING ...AND DOMESTIC HOT WATER CIRCULATION IN INLAND STEEL BUILDING

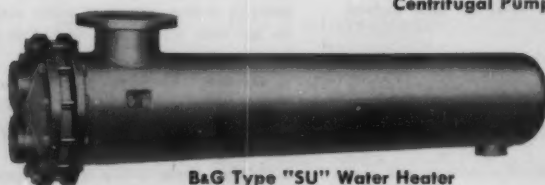
In this outstanding building, B&G Series 1531 Pumps are used in three different applications to (1) circulate water in the first floor heating system, (2) supply hot anti-freeze solution to snow melting panels, (3) circulate chilled water and cooling tower make-up water.

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RESIDENTIAL SWIMMING POOLS: 2

Minimum Standards prepared by the National Swimming Pool Institute

MECHANICAL

1. Filters—Every pool shall be equipped with a recirculating system capable of filtering the entire contents of the pool in 18 hr², or less, when the flow is calculated at a maximum of 5 gallons per minute, per square foot of filter area.

a. Filters shall be capable of maintaining the clarity of the water to permit the ready identification, through an 8 ft depth of water, of a disc 2 in. in diameter, which is divided into four quadrants in alternate colors of red and white.

b. Filter capacity shall be such that it need not be cleaned more frequently than once every four days under normal operation.

c. All filters shall be equipped with influent and effluent pressure gauges, to determine the pressure differential and frequency of cleaning.

d. All filter systems shall be equipped with an air release at the high point in the system. Each filter shall be provided with a visual means of determining when the filter has been restored to original cleanliness.

e. Operating instructions shall be posted on every filter system and all valves shall be properly designated with metal tags, indicating purpose.

2. Sand Pressure Filters—Sand filter systems shall be designed and installed to operate at a rate not to exceed 5 gallons per minute, per sq ft of filter area and to backwash at a minimum rate of 10 gallons per minute, per sq ft of surface area.

a. Filter tanks shall be fabricated to 1956 ASME Specifications for noncode pressure vessels, with the exception that standard type dished and flanged heads may be used. Tanks shall be built for a minimum of 50 pounds working pressure and tested at 150 psi. The filter underdrain shall have an effective distribution of at least 25 percent of the cross sectional area of the tank. Tanks placed underground shall be steel plate at least $\frac{3}{16}$ in. in thickness, with an approved non-corrosive exterior coating.

b. Filter tanks shall be supported in a manner to prevent tipping or settling.

3. Filter Media Specifications*

a. Filter sand shall be a hard uniformly graded, silica material with effective particle sizes, between 0.45 and 0.55 millimeters in diameter, with uniformity coefficient of 1.45 to 1.69. There shall be no limestone or clay present.

b. Filter sand shall be no less than 19 in. in depth with a freeboard of no less than 9 in. or more than 12 in.

c. There shall be no less than four grades of rock, which shall be clean, non crushed,

rounded, non calcareous material.

d. The total depth of the rock supporting bed shall be no less than 15 in. and each grade shall be 2 in. or greater in depth. Each layer of rock shall be leveled to prevent intermixing of adjacent grades.

e. The top layer shall vary in size between $\frac{1}{8}$ and $\frac{1}{4}$ in. The next layer shall vary in size between $\frac{1}{4}$ and $\frac{1}{2}$ in. The next layer shall vary in size between $\frac{1}{2}$ and $\frac{3}{4}$ in. The bottom layer shall vary in size between 1 and $1\frac{1}{2}$ in.

4. Recirculating Pumps—The recirculating pump shall have sufficient capacity to provide the rated flows of the filter system, without exceeding the head loss at which the pump will deliver such flows. The pump motor shall not be operated at an overload which exceeds the service factor.

a. Pool pump shall be equipped on the inlet side with an approved type hair and lint strainer. The basket of the strainer shall be non-corrosive and have an open screen surface of at least four times the cross sectional area of the inlet pipe.

5. Pool Piping—Shall be sized to permit the rated flows for filtering and cleaning without exceeding the maximum head, at which the pump will provide such flows. In general, the water velocity in the pool piping should not exceed 10 ft per second. Where velocity exceeds 10 ft per second, summary calculations should be provided to show that rated flows are possible with the pump and piping provided. The recirculating piping and fittings shall meet the following requirements:

a. The vacuum fitting(s) shall be in an accessible position(s) below water line.

b. A main outlet shall be placed at the deepest point in every pool for recirculating and emptying the pool.

c. Pool recirculation piping, passing through the pool structure, shall be copper tubing (with a minimum wall thickness of Type "L") brass or an approved equal.

d. Filtered water inlets shall be provided in sufficient quantity and shall be properly spaced to provide a maximum circulation of the main body and surface of water.

6. Valves—Fullway valves shall be installed throughout, to insure proper functioning of the filtration and piping system.

a. A valve shall be installed on the main suction line located in an accessible place outside the walls of the pool.

b. Valves up to, and including 2 in. in size

shall be brass. Sizes over 2 in. may have cast-iron or brass bodies. All working parts of valves shall be non-corrosive material.

c. Combination valves may be installed if the materials and design comply with the intent of these standards.

7. Tests—All pool piping shall be in compliance with these standards and the installation and construction of the pool piping system in accordance with the approved plans. The entire pool piping system shall be tested with a water test of 50 psi and proved tight before covering or concealing.

WATER SUPPLY AND TREATMENT

The potable water supply to any swimming pool shall be installed as required in AWWA Standards.

a. Unless an approved type of filling system is installed, such as is required by AWWA, any source of water which may be used to fill the pool shall be equipped with backflow protection.

b. No over the rim fill spout will be accepted unless located under a diving board or installed in a manner approved by local authorities so as to remove any hazard.

GENERAL

Wherever building regulations are established, generally the requirements are similar to those listed below.

a. Before commencing the installation of any swimming pool, a permit authorizing such work shall be obtained from the building department.

b. Application for permits shall be accompanied by plans and calculations in duplicate or triplicate and in sufficient detail showing the following:

1. Plot plan, elevations with dimensions all drawn to scale.

2. Pool dimensions, depths and volume in gallons.

3. Type and size of filter systems, filtration and backwash capacities.

4. Pool piping layout, with all pipe sizes and valves shown, and types of materials to be used.

5. The rated capacity and head at filtration and backwash flows of the pool pump in gpm with the size and type of motor.

6. Location and type of waste disposal system.

7. Structural, calculations and details prepared and signed by a registered engineer.

c. Set Back—Swimming pools shall be classified as accessory structures and conform to setbacks as required for such structures in local building codes.

*Note: Standards for diatomaceous earth filters are presently being prepared by a National Committee of diatomaceous earth filter manufacturers.

ANNOUNCING A MERGER:



AMERICAN WINDOW GLASS COMPANY, Pittsburgh, Pa.
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The merger pools the experience and technical skill of American Window Glass Company, the quality leader and oldest producer of sheet glass in the United States, with Saint-Gobain, the oldest and one of the largest plate glass manufacturers in the world.

Operations and activities of the former American Window Glass Company will be carried on by American Window Glass Division of the new corporation, and the former Blue Ridge Glass Corporation will henceforth be operated as the Blue Ridge Glass Division.

When it enters into the manufacture of plate glass and through continuing to produce Blue Ridge's patterned glass and American's sheet glass, American-Saint Gobain Corporation will be a fully integrated, full-line producer of flat glass products in the United States. The merged company plans to build a modern plate glass factory which will employ the latest manufacturing techniques of Saint-Gobain.

This combination of diversified facilities and extensive experience will enable American-Saint Gobain Corporation to contribute to further progress of the glass industry. Through expanded research, the development of new glass products and applications will enhance the living comfort of the nation.



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Plants at Arnold, Jeannette,
Elwood City, Pa., Okmulgee, Okla.

Blue Ridge Glass Division
Plant at Kingsport, Tenn.

WGW 7199

RESIDENTIAL SWIMMING POOLS: 3—Minimum Filter and Pipe Sizes

Minimum Standards prepared by the National Swimming Pool Institute

FOR RESIDENTIAL POOLS WITH CONVENTIONAL SAND PRESSURE FILTERS Based on: Maximum filter rate—5 gpm per sq ft of filter area. Minimum backwash rate—10 gpm per sq ft of filter area. Complete turnover of pool capacity in 18 hours.

POOL CAPACITY		FILTER SIZE		FILTER AND BACKWASH RATES	
Maximum Pool Capacity	Filter Diameter	Filter Area	Filter Rate	Backwash Rate	
9,550 gal	18 in	1.77 ft	9 gpm	18 gpm	
11,750 gal	20 in	2.18 ft	11 gpm	22 gpm	
17,000 gal	24 in	3.14 ft	16 gpm	32 gpm	
26,400 gal	30 in	4.90 ft	25 gpm	50 gpm	
38,200 gal	36 in	7.07 ft	35 gpm	71 gpm	
51,900 gal	42 in	9.62 ft	48 gpm	96 gpm	
67,800 gal	48 in	12.57 ft	63 gpm	126 gpm	

PIPE VELOCITIES IN FEET PER SECOND (Based on Standard Steel Pipe)

Flow Rate	Pipe Size		Flow Rate	Pipe Size			
	¾ in	1 in		1¼ in	1½ in	2 in	2½ in
9 gpm	5.4		32 gpm	6.6			
10 gpm	6.0		35 gpm	7.5			
11 gpm	6.6		48 gpm	10.2*	7.6		
16 gpm	9.6		50 gpm		7.9		
18 gpm	10.8*	6.7	63 gpm		9.9		
22 gpm		8.2	71 gpm		11.1*	6.9	
25 gpm		9.3	96 gpm			9.2	6.4
32 gpm		11.9*	126 gpm			12.1*	8.4

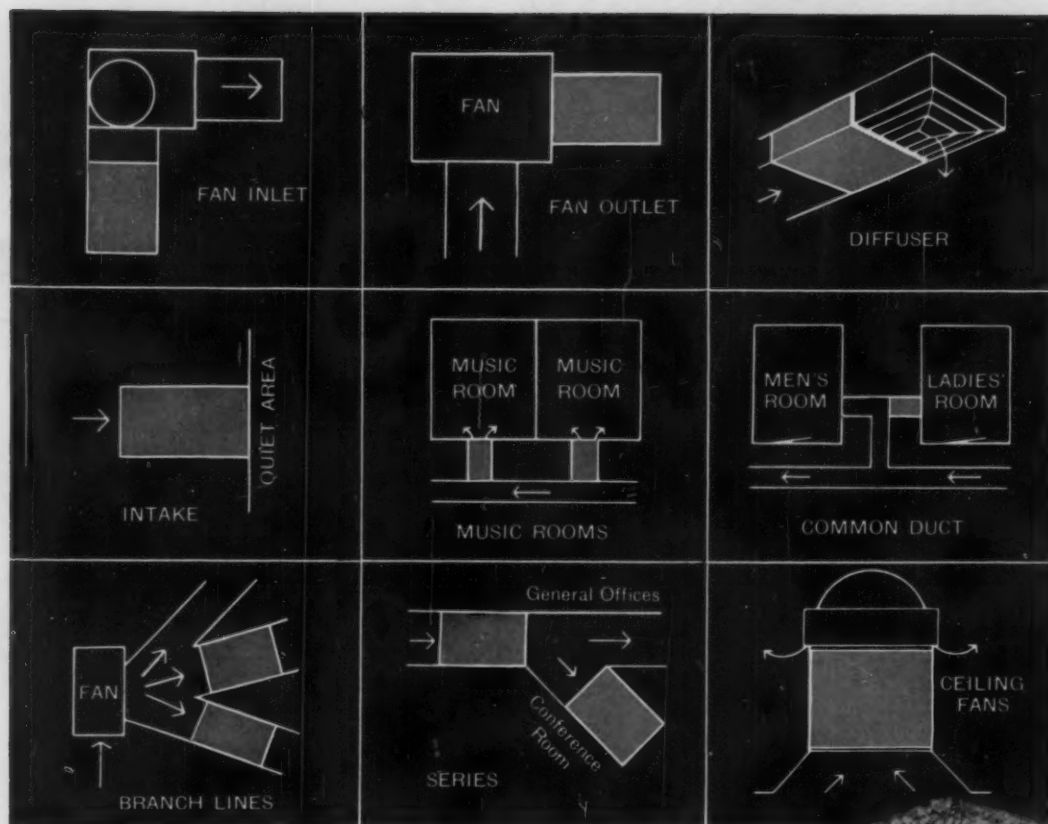
*Do not select suction or backwash line sizes where velocity exceeds 10 ft per second without engineering calculations.

MINIMUM PIPE SIZES*

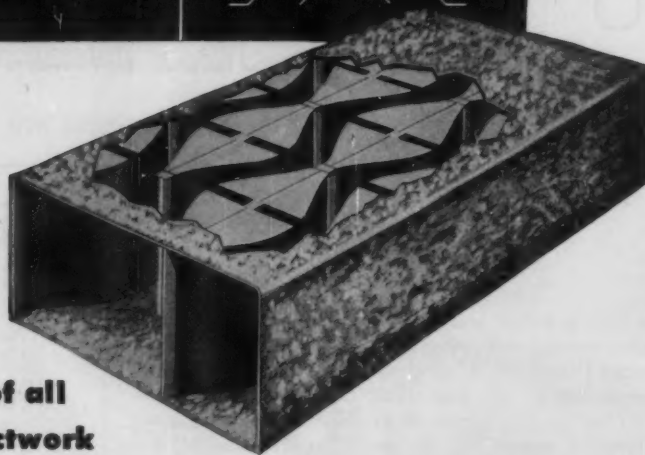
Diameter of Filter	Maximum Length Suction Line	Main Suction Line	Vacuum Line	Filter Return Line	Backwash Line	Approx. Total Backwash Head
18 in	20 ft	1 in	1 in	¾ in	1 in	32 ft
	30 ft	1 in	1 in	¾ in	1 in	35 ft
	40 ft	1¼ in	1¼ in	¾ in	1¼ in	22 ft
	50 ft	1¼ in	1¼ in	¾ in	1¼ in	24 ft
20 in	20 ft	1 in	1 in	¾ in	1¼ in	29 ft
	30 ft	1¼ in	1¼ in	¾ in	1¼ in	24 ft
	40 ft	1¼ in	1¼ in	¾ in	1¼ in	25 ft
	50 ft	1¼ in	1¼ in	¾ in	1¼ in	26 ft
24 in	20 ft	1¼ in	1¼ in	1 in	1¼ in	28 ft
	30 ft	1¼ in	1¼ in	1 in	1¼ in	31 ft
	40 ft	1¼ in	1¼ in	1 in	1¼ in	34 ft
	50 ft	1½ in	1¼ in	1 in	1¼ in	29 ft
30 in	20 ft	1½ in	1½ in	1¼ in	1½ in	29 ft
	30 ft	1½ in	1½ in	1¼ in	1½ in	32 ft
	40 ft	1½ in	1½ in	1¼ in	1½ in	35 ft
	50 ft	2 in	1½ in	1¼ in	1½ in	28 ft
36 in	20 ft	2 in	1½ in	1½ in	2 in	25 ft
	30 ft	2 in	1½ in	1½ in	2 in	27 ft
	40 ft	2 in	1½ in	1½ in	2 in	29 ft
	50 ft	2 in	1½ in	1½ in	2 in	31 ft
42 in	20 ft	2 in	1½ in	1½ in	2 in	31 ft
	30 ft	2½ in	1½ in	1½ in	2½ in	22 ft
	40 ft	2½ in	1½ in	1½ in	2½ in	24 ft
	50 ft	2½ in	1½ in	1½ in	2½ in	26 ft
48 in	20 ft	2½ in	1½ in	1½ in	2½ in	25 ft
	30 ft	2½ in	2 in**	1½ in	2½ in	27 ft
	40 ft	2½ in	2 in**	1½ in	2½ in	28 ft
	50 ft	2½ in	2 in**	1½ in	2½ in	33 ft

*Assumes filter at deck level with backwash outlet plus or minus 2 ft of deck level—not over 30 ft long. Allowable loss due to friction through filter and face piping—15 ft. Five 90° bends in each line is maximum considered.

**1½ in lines acceptable, but not recommended.



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Install AIRCOUSTAT Sound Traps. AIRCOUSTAT eliminates guesswork, wasted space and unnecessary expense of duct lining. You can guarantee your client trouble-free performance. You can estimate with complete confidence the perform-

ance of particular applications. If AIRCOUSTAT fits geometrically, it fits acoustically.

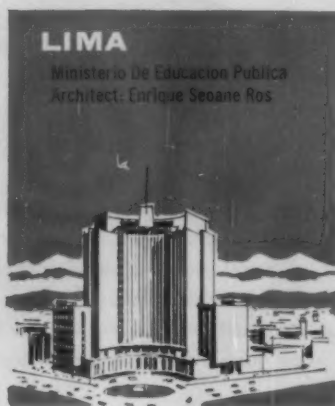
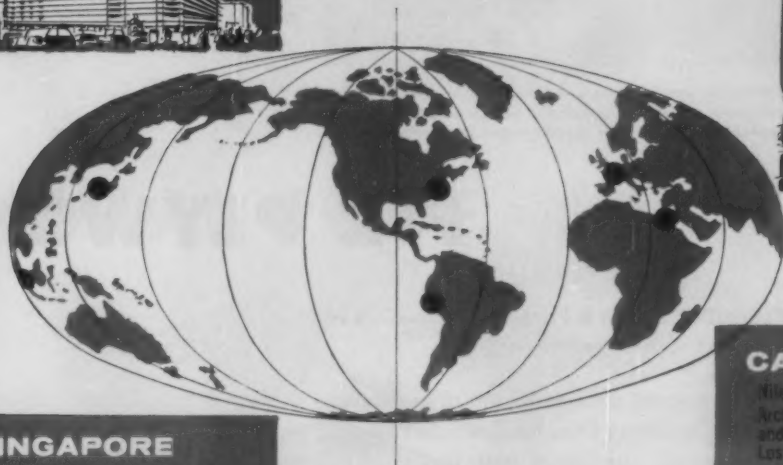
AIRCOUSTAT saves you space. Its greater effectiveness permits smaller-sized ducting. It eliminates bulky mufflers.

For more details, write to KOPPERS COMPANY, INC., Industrial Sound Control Dept., 6607 Scott Street, Baltimore 3, Md.



INDUSTRIAL SOUND CONTROL

Engineered Products Sold with Service



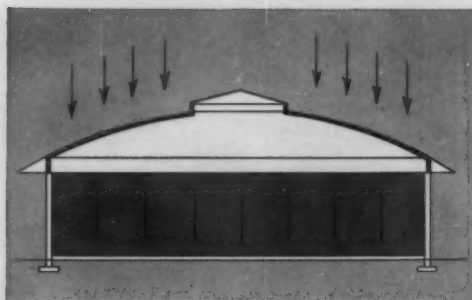
INTERNATIONALLY THE FIRST CHOICE

... Today's outstanding new buildings have one thing in common: modern builders' hardware by CORBIN. Recognized everywhere for quality and a complete line, CORBIN is *first choice* for hotels, terminals—for commercial and institutional architecture of every type. It is the world's most widely used builders' hardware. P & F CORBIN DIVISION, The American Hardware Corporation, New Britain, Connecticut.

UNIT Locks • Cylindrical Locks • Mortise Locks • Door Closers • Exit Fixtures
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new approaches to structural design with fir plywood



Engineering tests by Douglas Fir Plywood Association showed vault resists three-times-normal roof load. Deflection at midspan was negligible. Note how door-high roof line saves wall area.

FIR PLYWOOD

ARCHITECT: Robert B. Price, A. I. A., Tacoma, Wash.
Robert C. Wing, Consulting Engineer

IN THIS graceful stressed-skin fir plywood domical roof, Architect Price has developed a simple and precisely engineered unit that combines beams, purlins and roof sheathing.

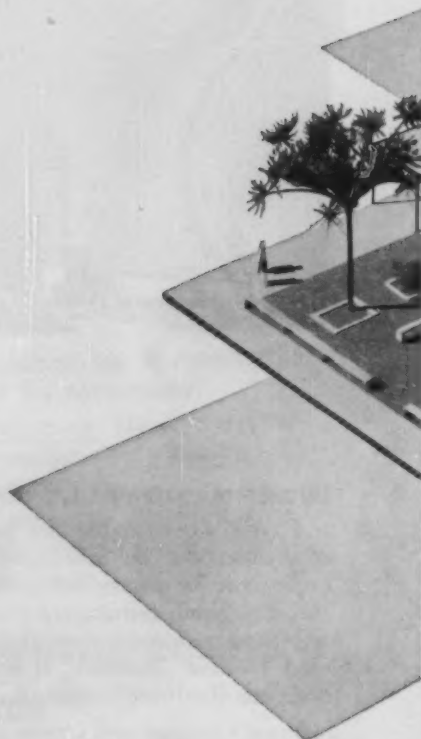
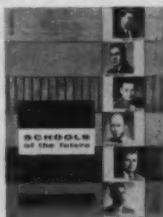
The first application of this new semi-spherical roof system is in the four-room satellite school shown at right. In its design, Price sought to create "an exciting and stimulating space with a high degree of flexibility and substantial construction economies."

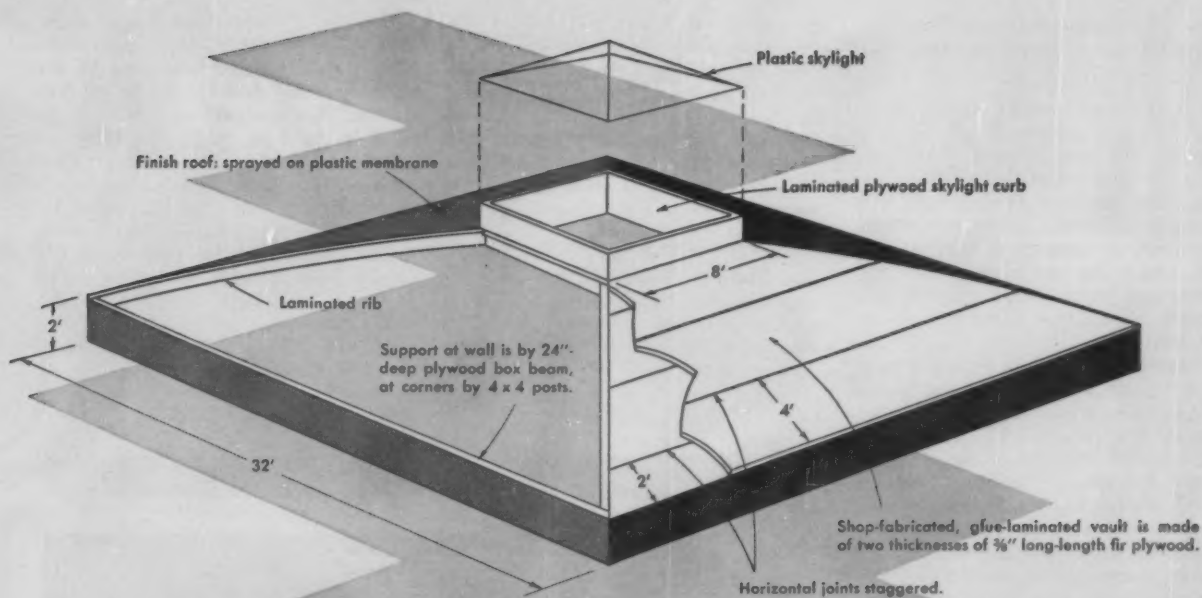
Adaptable to other types of buildings, the Price roof system is a logical design evolution in which lightweight fir plywood replaces heavier and costlier materials. It provides a long, post-free span, pleasing mass and profile, has excellent lighting, insulation and acoustical properties.

ONE OF A SERIES FROM "SCHOOLS OF THE FUTURE"

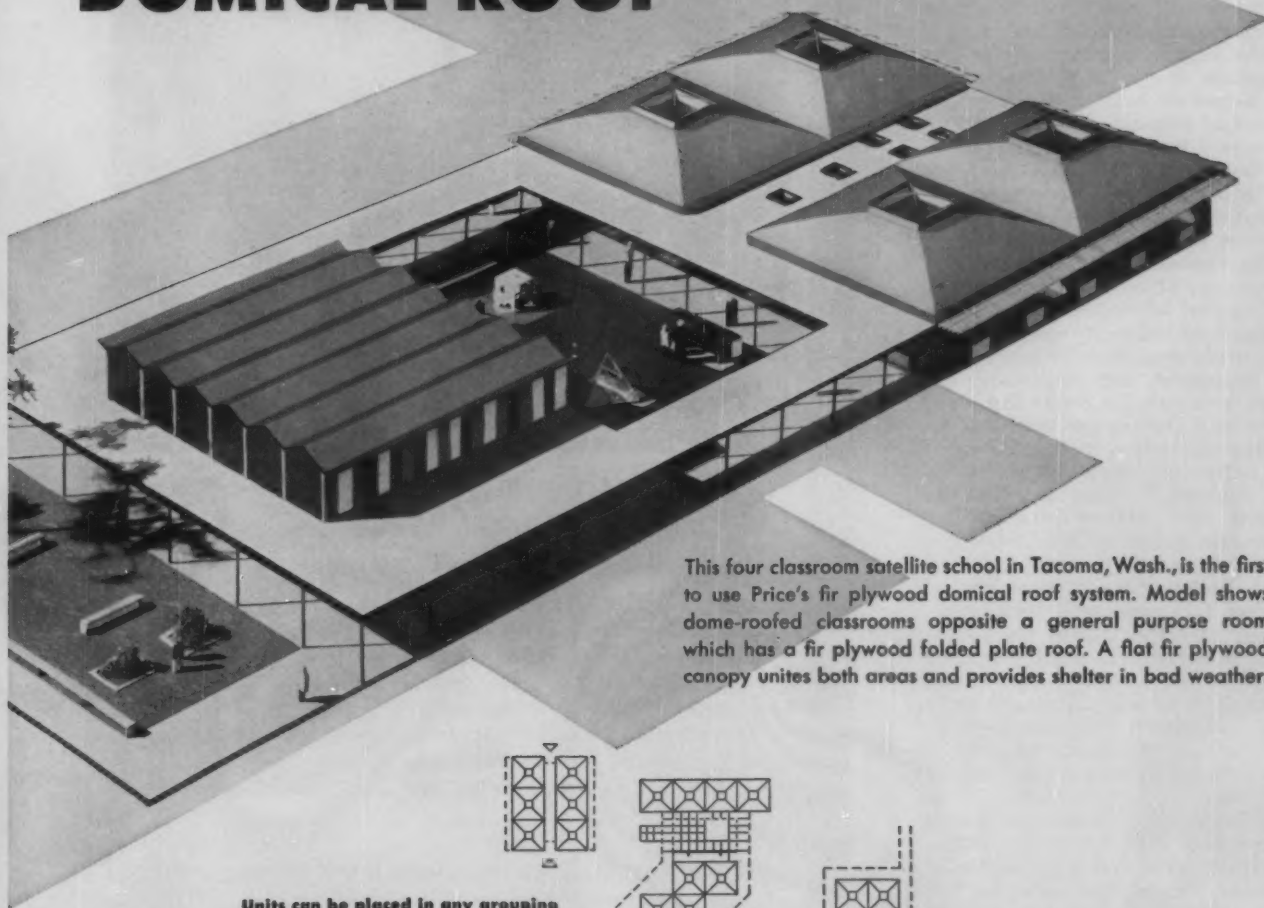
... a portfolio collection of outstanding designs by six leading architectural firms. Includes details on domical roof shown above. For your free copy, write (USA only) Douglas Fir Plywood Association, Tacoma, Wn.

Also write for information about fir plywood design and engineering consultation services.

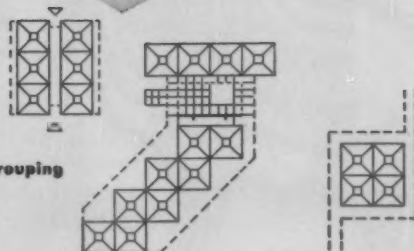




DOMICAL ROOF



Units can be placed in any grouping



Full Area Element Offers New Potential for Electric Heating

The concept of heating spaces with large radiant panels is not a new one. But the possibility of constructing such a panel with a (literally) paper-thin heating element that will continue to operate safely even when punctured or immersed in water is new. According to Chemelex, Inc. of Niskayuna, N. Y., their recently-developed *Lamitherm* element will do just that.

Essentially a high grade paper made up of a conductive material and suitable fibers, the *Lamitherm* element is energized by two copper foil "busses" bonded along opposite edges. An electric current applied at one corner travels across the element to the opposite "catty" corner, producing heat over the entire surface en route. By laminating this element between thin layers of electrical insulation, such as phenolic paper, adequate electrical protection is provided without accompanying inefficiency in heat transfer. Thus the temperature of the heat source can be kept to a minimum for the amount of energy being transferred. For household heating, for instance, instead of running at the red glow of a sunbowl type heater or the 300 to 400 degrees of a glass wall type heating panel, the heat source can be spread over an entire wall or ceiling and run at a safe 100 degrees.

The versatility of the *Lamitherm* element is, of course, of prime importance in developing new heating applications. After the elements have been made on production paper making equipment, they can be impregnated with suitable resins and laminated into any desired material, including decorative materials, which will withstand temperatures up to 500 degrees F. They can also be molded into various products or made into shapes such as tubes and cones, and can provide cheap, throw-away heaters for one-time use or heaters for permanent installation. In any case they retain the advantages of a full area heating surface which is not seriously affected by moisture or by minor cuts and tears (e.g., nail holes). There are also simple methods of repairing even a break all the way across the heating surface.

Although the *Lamitherm* element has not been used extensively to date the Washington Water Power Co. of Spokane, Wash., has experimented with radiant heating panels using it in combination with pressed board, paper and metal, and reportedly plans to install in one of its buildings

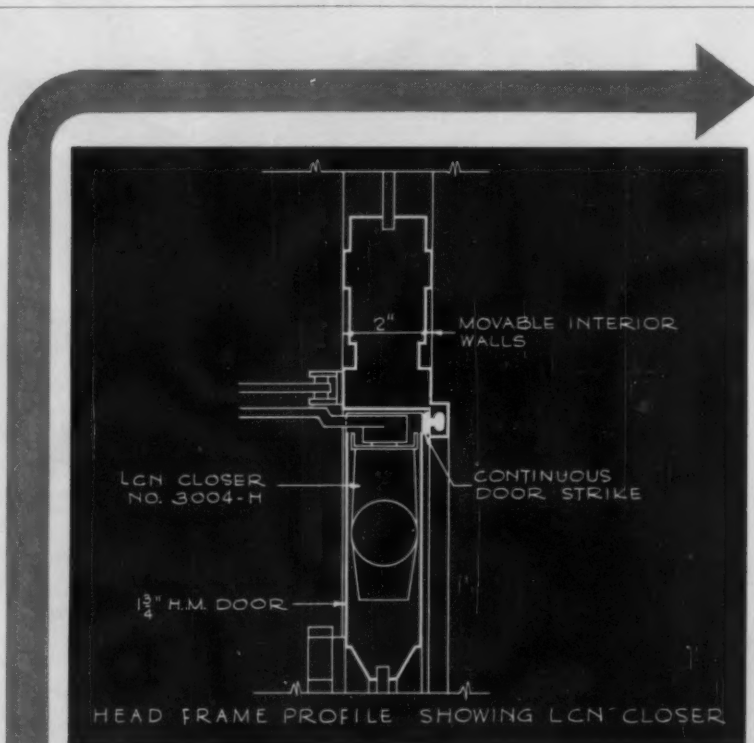
a curtain wall which will consist of a porcelainized steel sandwich with a phenolic laminated sheet of the conducting paper on the inside surface of the panel. The element is also being used in a portable heater, and plans are afoot to test the feasibility of incorporating it in a 1/4 in. plywood panel.

New Plumbing Standards

The State of New York has issued a new consolidated book on plumbing standards. The two-part title is *Plumbing Standards of the State*

Building Construction Code—Bulletin No. 23, Minimum Requirements for Plumbing, recommended by Department of Health, State of New York. This compact volume (122 pp, 5 3/4 in. by 9 in. by 1/4 in.) is both a performance type code and an illustrated handbook detailing acceptable methods for fulfilling this code. Effective on August 15, 1958, it combines requirements, references and some new material including coverage of "suds lock" and the disposal of radioactive wastes.

more roundup on page 220



CONSTRUCTION DETAILS

for LCN Closer Concealed-in-Door Shown on Opposite Page

The LCN Series 3004 Closer's Main Points:

1. Arm is attached to door frame by surface-applied shoe; closing power adjustable by reversing position of shoe
2. Door is hung on butts; closer is easy to adjust
3. Closer is used for metal interior doors only; Underwriters approved for self-closing doors
4. Hydraulic back-check protects walls, etc. on opening swing
5. Double arm provides high closing power
6. Arm may be regular or 90°-140° hold-open type as shown

Complete Catalog on Request—No Obligation
or See Sweet's 1958, Sec. 18e/La

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario

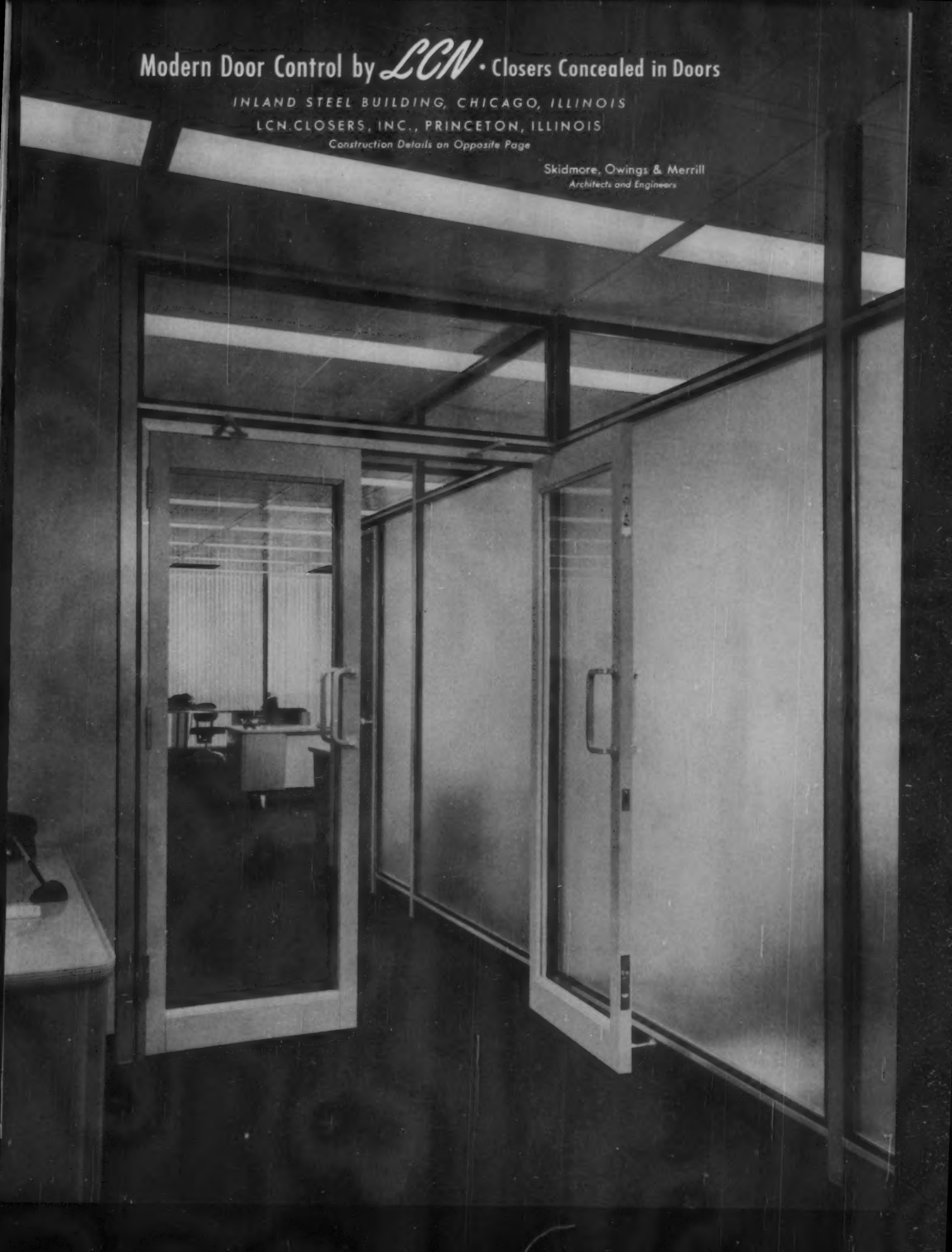
Modern Door Control by *LCN* • Closers Concealed in Doors

INLAND STEEL BUILDING, CHICAGO, ILLINOIS

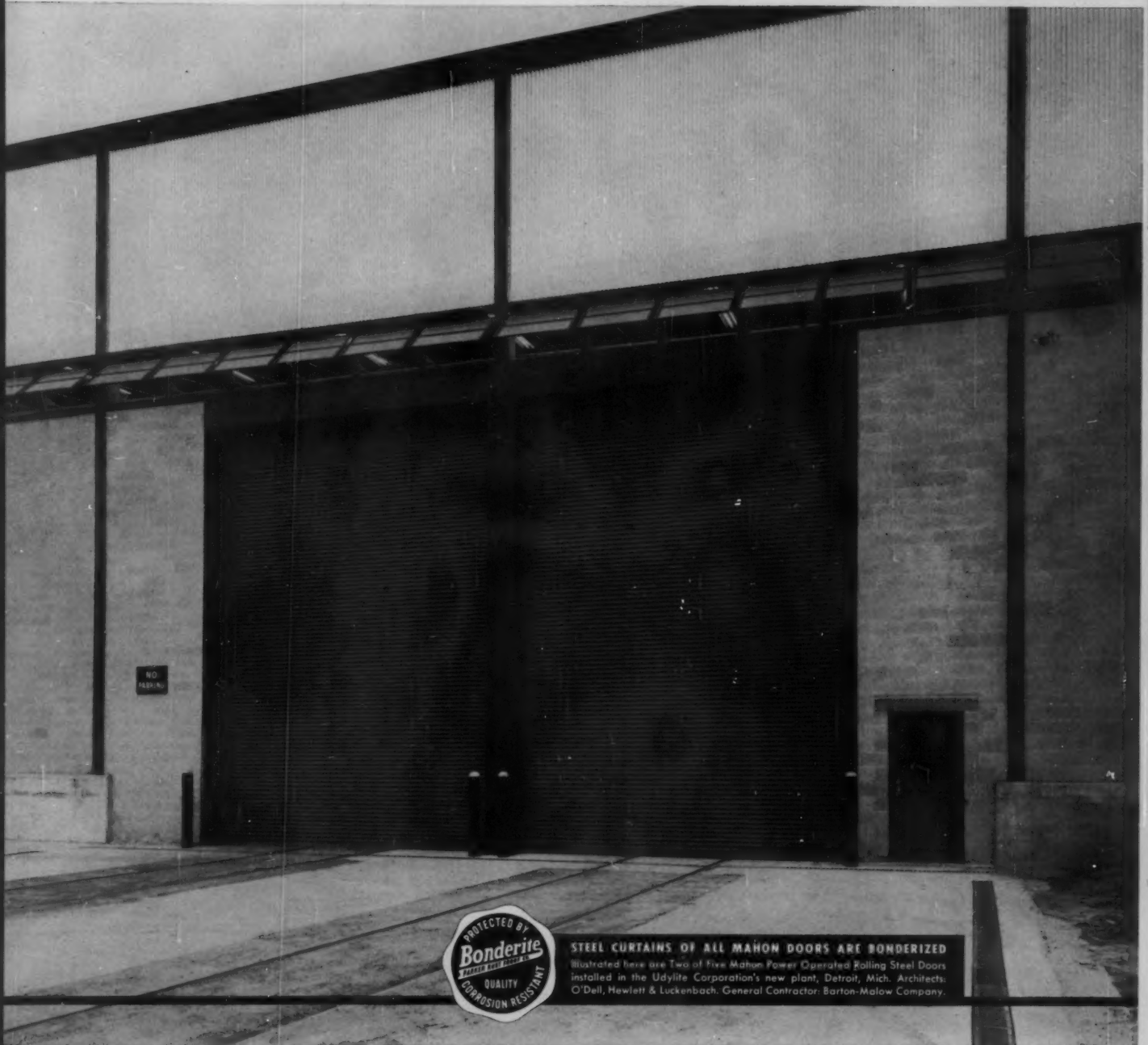
LCN.CLOSERS, INC., PRINCETON, ILLINOIS

Construction Details on Opposite Page

Skidmore, Owings & Merrill
Architects and Engineers



Mahon ROLLING DOORS



STEEL CURTAINS OF ALL MAHON DOORS ARE BONDERIZED
Illustrated here are Two of Five Mahon Power Operated Rolling Steel Doors
installed in the Udyllite Corporation's new plant, Detroit, Mich. Architects:
O'Dell, Hewlett & Luckenbach. General Contractor: Barton-Malow Company.

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- Acoustical Metal Walls and Partitions
- Acoustical Metal Ceilings
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☆ *For INFORMATION See SWEET'S FILES
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automatic
opens and closes
the door

The **RIXSON automatic** has been carefully engineered to offer many new advantages of safety and function. It opens the door by hydraulic power and closes the door by hydraulic power—no springs required. A dry-sump system avoids damage from fluid leakage on floor.

The **RIXSON automatic** is completely concealed in the floor—no arms or other hardware are visible. In addition to mat actuated styles, the **automatic** can be actuated by floor, desk or wall switch.



If a person steps on safety mat after door is in opening swing, door will not strike him, but will STOP.



If person is on safety mat, another person stepping on actuating mat will not cause door to swing open.



If a person walks off safety mat and then, while door is closing, steps back on mat, door will stop and not swing suddenly open.



A break-a-way that allows doors operating IN to be forced OUT in emergency (if there are no door stops) is standard equipment.

A safety trip prevents motor from running continuously and avoids danger of overheating.

Rixson engineers will gladly work with you on your original plans or special applications. Complete template and installation instructions furnished.



Write for complete description and details

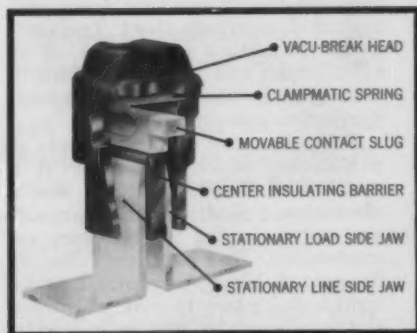
THE OSCAR C. **RIXSON** COMPANY

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VACU-BREAK CONTROL snuffs arcs immediately when breaking circuits under load. The enclosed head limits the oxygen available during the brief arcing period. Closeness of the head material causes the arc to cool and extinguish quickly. "Double-break" action reduces the distance the Vacu-Break head must travel before the arc is extinguished. In addition, Clampmatic action assures bolt-tight contacts, accelerates breaks.

Bulldog Vacu-Break® Power Panels provide the efficient, economical way to centralize lighting and power distribution. One compact panel controls a host of lights and motors . . . saves space . . . provides real circuit flexibility.

Bulldog Power Panels are pre-fabricated . . . switch units are standardized and interchangeable. Units are available from 30 to 600 amperes. It is simplicity itself to convert the panels when circuit requirements change.

Exclusive Vacu-Break control snuffs arcs quickly . . . Clampmatic® action assures quick-make, quick-break, bolt-tight switching connections—longer equipment life. Find out about Bulldog Power Panels from your Bulldog field engineer, or write Bulldog direct.

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BULLDOG



Bulldog Electric Products Company, Division of I-T-E Circuit Breaker Company
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In Canada: Bulldog Electric Products Co. (Canada) Ltd., 80 Clayson Rd., Toronto 15, Ont.

HEAT BETTER ELECTRICALLY

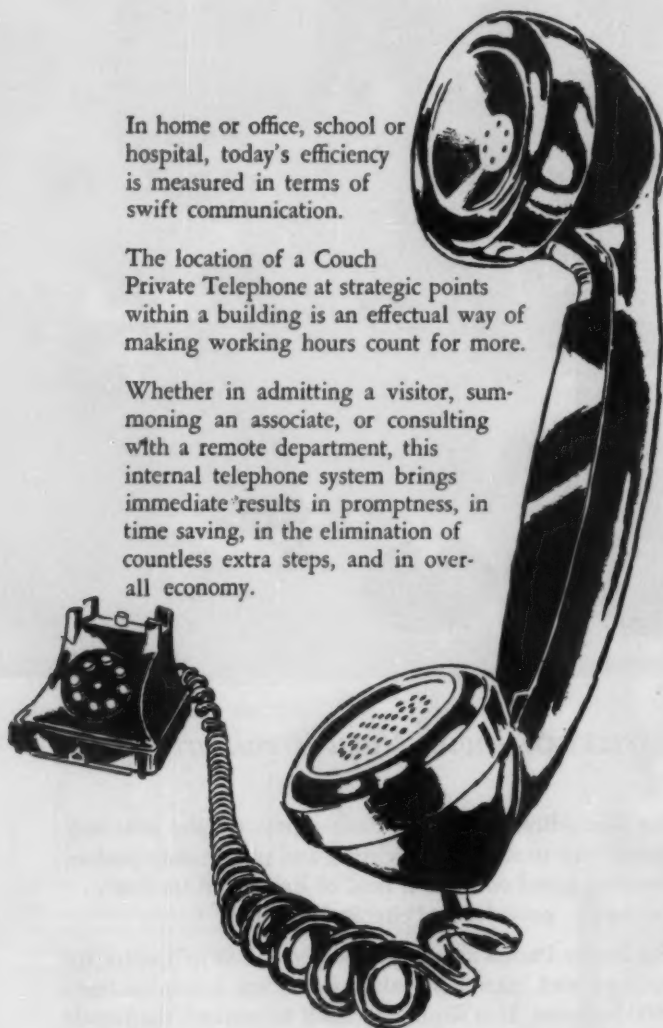
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...IT'S FOR YOU!

In home or office, school or hospital, today's efficiency is measured in terms of swift communication.

The location of a Couch Private Telephone at strategic points within a building is an effectual way of making working hours count for more.

Whether in admitting a visitor, summoning an associate, or consulting with a remote department, this internal telephone system brings immediate results in promptness, in time saving, in the elimination of countless extra steps, and in overall economy.



Couch manufactures a variety of systems to cover requirements ranging from two stations up to 200. Designed as self-contained inter-communication units, Couch Private Telephone Systems provide consistent service and satisfaction.

Write for Bulletin 133.



Simplified Systems of Communication

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NORTH QUINCY 71, MASSACHUSETTS

Technical Roundup

Manual to Aid in Writing Specs for Cold Weather Concrete Work

The Concrete Industry Board of New York City recently published a four-page pamphlet entitled *Manual of Recommended Practice and Procedure for the Production and Placing of Concrete During Hot and Cold Weather*. A digest of both knowledge and successful practice on the part of a committee of men experienced on concrete work in the metropolitan area of New York, it is intended eventually to be written into specifications, and could serve as a guide for other cities in the north temperate zone.

Many firms doing considerable concrete work have standard practice sheets of their own for adverse conditions. This pamphlet is intended to combine the good features of many of these. Subjects covered include: temperature requirements of water, aggregate and final mix; ice in the aggregate; insulation and heating of the forms; insulation and heating during set and cure; and waiting time before the stripping of forms. Mention is also made of additives and the operation of batch plants.

While there are several courses to follow in determining the proper time for stripping the forms—i.e., time and temperature tests, cylinder tests, and core cutting—the most dependable under most circumstances is deemed to be the time and temperature method. Of course the experienced engineer will know when and how to deviate from these specifications. Setting time and curing time are two things that sometimes are cut dangerously short; frequently the membrane is stripped off or cut through and the slab suffers in consequence. The manual suggests preventive measures.

Following the announcement of publication, which was made at a meeting of the C.I.B., there was a discussion period during which several points in the manual were re-emphasized. One of these was the danger of heavy concentrations of combustion gases in covered spaces, to the concrete as well as to people. It was also brought out that curing compounds must go on early in cold weather.

While there are more exhaustive treatments on the subject of cold weather concrete than this manual, they are in the form of texts or treatises which must be abstracted and condensed for use as specification material. This manual is designed to fill that gap.

INCINERATION

Here's Incinerator Information You Should Have

Donley offers a practical approach to the problems of providing proper incineration for institutional, commercial and apartment buildings to increase their functional value



APARTMENT AND INSTITUTIONAL flue-fed incinerator is fed through hopper doors on each floor.

For years architects have needed a consistent scientific approach to the complex problems of incineration. Wide variations in city ordinances and building codes have further compounded their problems. In other cases, architects themselves have overlooked the importance of providing for waste disposal.

Donley offers guidance free of charge to architects to solve their special incinerator problems using Donley's field-tested designs and equipment that meet the standards of leading fire insurance companies.

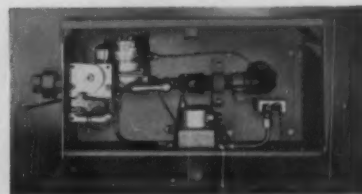
Incinerators built with Donley parts and designs assure successful operation with different types and volumes of waste because they control



COMMERCIAL AND INDUSTRIAL direct-fed incinerators for on-the-spot disposal of excelsior, rubbish, etc.

or provide for the following essential operating features:

1. Combustion chamber design
2. Distribution of combustion air
3. Frequency of burning
4. Combustion time
5. Flame distribution
6. Temperature

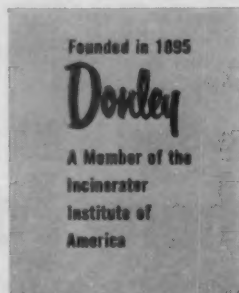


AUTOMATIC SAFETY BURNER* (No. 300) features blowout-resistant safety pilot... adjustable electric timer... 100% flame-failure protection.
*Patent pending

Donley advocates the principle of frequent small fires for immediate waste disposal without high draft to minimize smoke, fly-ash and odor. This principle offers the added advantage of increasing incinerator life by avoiding prolonged high temperatures common to once-a-day burning.

When you specify a Donley Incinerator, detailed dimensional drawings, list of materials and all metal and mechanical parts are supplied by Donley for installation by local brick masons.

See our inserts in Sweet's Catalogs.



THE DONLEY BROTHERS COMPANY
13972 Miles Avenue • Cleveland 5, Ohio
Please send me free of charge your Donley Incinerator Catalog.

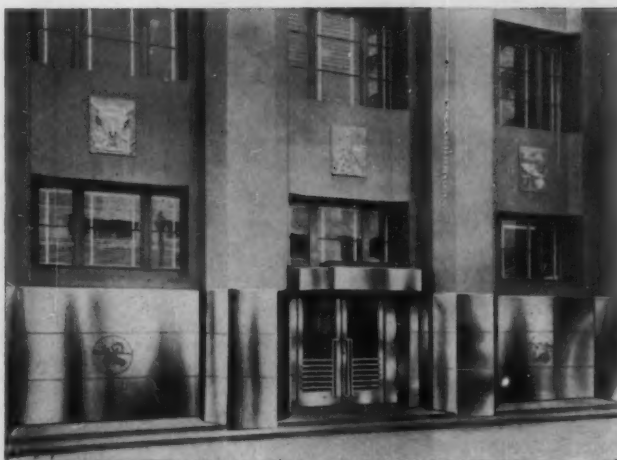
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a beating

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If modernization or new construction is on your mind, this 40-page booklet contains many ideas on handsome treatments for you. (Note: A new booklet on "AL Stainless in Food Preparation and Serving Equipment" is in process—write for one of the first copies when available.)

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WSW 5209 C

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You have to design for maximum attractiveness in those areas of buildings which have most traffic—such as building fronts, marquees, entrances, lobby details, railings, etc. Yet those same places are exactly the locations where you need maximum utility, too.

What's the best material to use? Just remember that stainless steel—and only stainless steel—gives you the nearest-to-perfect combination of satiny beauty and rugged toughness. No other material is as good-looking and at the same time as

strong, hard-surfaced and resistant to rust or discoloration. No other material requires as little maintenance, cleans as easily and lasts as long.

In short, whether you're considering AL Stainless Steel for just the "hard-wear" spots or for an entire curtain-wall design, keep this fact in mind: *no other material costs as little over the long pull as stainless steel.*

Let us give you any information or technical assistance you may require.
Allegheny Ludlum Steel Corporation,
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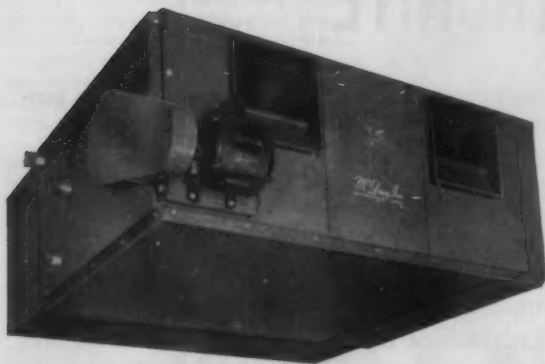
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and MORE to
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McQuay Seasonmaster central station air conditioners give you more of everything you want, more of everything you need. There is more inherent quality—more dependability—more rugged construction—more flexibility in location of coil connections and air openings—so necessary to that kind of satisfaction that only McQuay Seasonmaster provides. McQuay also gives you more to choose from, with 16 models in either horizontal or vertical type. Add to this the most complete combinations of heating and cooling coils—water, steam or direct expansion—all with the famous McQuay Ripple-Fin construction, and the wide range of accessories, and you have the most universal line of central station air conditioners in the industry. Yes, you really get more—and more to choose from with McQuay Seasonmaster central station air conditioners. For complete information, contact the McQuay representative in or near your city or write McQuay, Inc., 1605 Broadway St. N. E., Minneapolis 13, Minn.

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SEASONMASTER

central station
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McQUAY HORIZONTAL SEASONMASTER

McQuay horizontal Seasonmaster with water coil, steam coil, face and by-pass, and flat filter section. Removable panels permit complete accessibility for inspection or service. All Seasonmaster coils are made with the exclusive McQuay Ripple-Fin construction.

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McQUAY VERTICAL SEASONMASTER

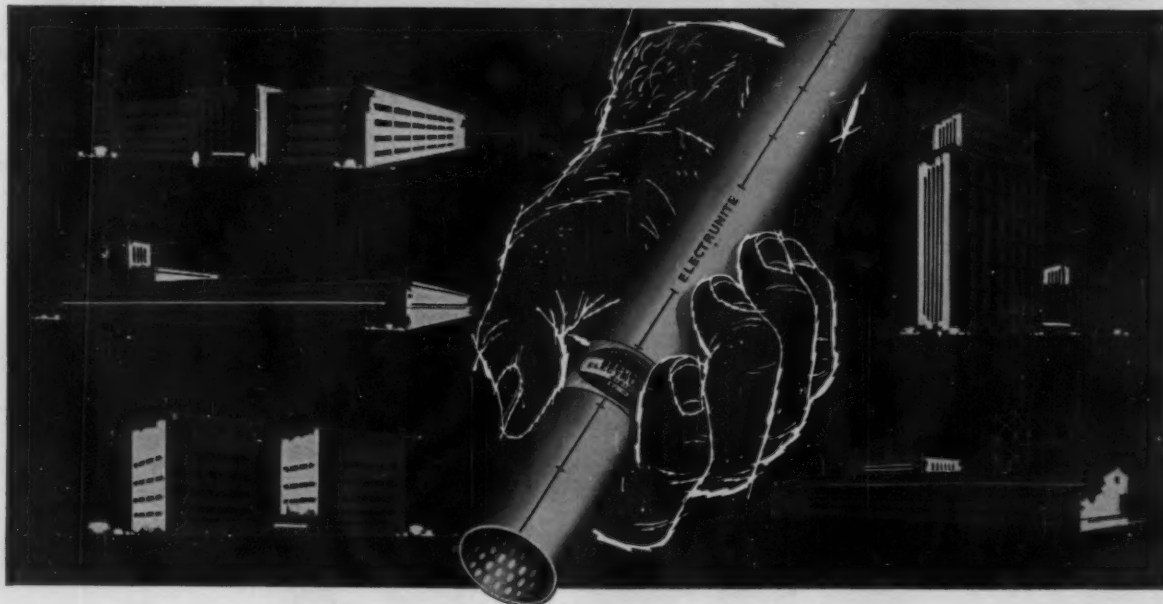
McQuay vertical Seasonmaster with direct expansion coil, steam coil, face and by-pass, and flat filter section. Heavy gage galvanized channel framework to form a rigid structure. Sixteen sizes available in either horizontal or vertical type. C.F.M. range from 640 to 29,000.

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design today to meet tomorrow's electrical loads with Republic **ELECTRUNITE** ELECTRICAL METALLIC TUBING

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Strong, sturdy, Republic **ELECTRUNITE** E.M.T. is the ideal electrical raceway conduit for concrete installations. Special galvanized finish protects every inch of Republic **ELECTRUNITE**—will not chip, peel, or flake even when the tube is bent. Another built-in quality reason for specifying Republic **ELECTRUNITE** to your clients and customers.



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TRUSCON METAL LATH and plaster provide flexibility in ceilings that are sometimes level, sometimes domed, sometimes formed into unusual contours. And you get additional structural advantages, such as rigidity, resistance to cracking and impact, sanitation, relative lightness of weight, and long-term economy. Write today.

TRUSCON VISION-VENT® WINDOW WALLS are an exciting type of fast, economical wall construction. Vision-Vent goes up quickly and efficiently! And offers this important plus—it's a wall with the window already in place, completely contained within the depth of window-framing members. In planning, designing, building—Truscon Vision-Vent Window Walls offer many advantages in all types of single story and multi-story applications. Truscon window engineers will be glad to work with you in developing design details and costs. Call your Truscon representative, or write today.



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- ☐ ENDURO Stainless Steel for architectural applications
- ☐ Truscon Metal Lath
- ☐ Truscon Vision-Vent Window Walls

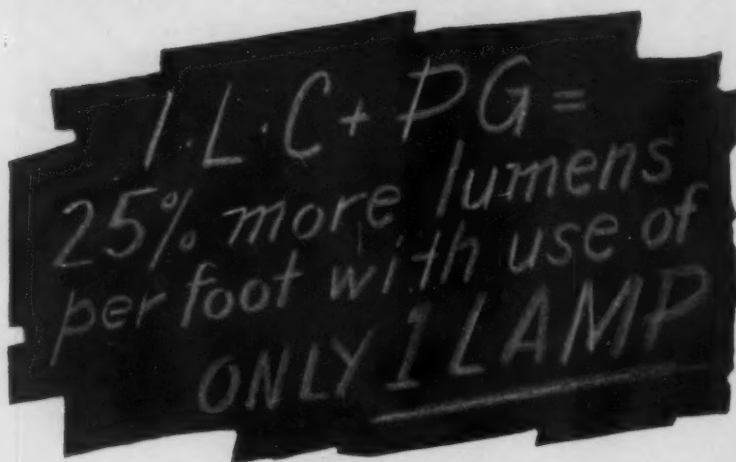
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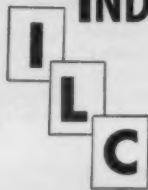
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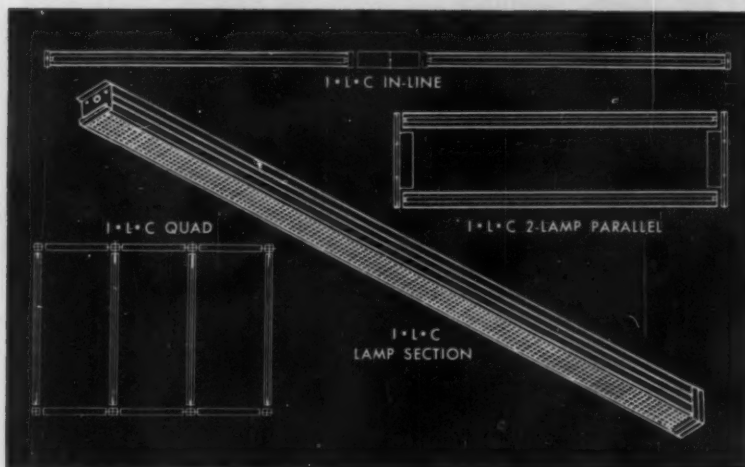
INDIRECT LUMINOUS CEILINGS



I-L-C—the first lighting fixture designed to use Power Groove fluorescent lamps with complete visual comfort for commercial lighting at 100 to 250 ft. candles.

Therefore, **I-L-C** with only one P. G. lamp actually provides 25% more lumens per foot than other units with two lamps when used in large selling and display areas. It all adds up to—more and better quality light at less cost with **I-L-C**.

3 BASIC I-L-C ARRANGEMENTS



I-L-C IN-LINE: Continuous single row tandem arrangements of two or more lamps with associated ballast enclosures and hangers.

I-L-C 2-LAMP PARALLEL: Two lamps in parallel arrangement on 24" centers, for individual or continuous row installations.

I-L-C QUAD: A multiple lamp system with provision for four or more 72" or 96" lamps in parallel and in-line arrangements, or both, and with spacing between lamps of 4', 6' or 8' as required.

For complete details send for Bulletin S257

581 A

SILVRAY LIGHTING, INC.
BOUND BROOK, NEW JERSEY

Product Reports

continued from page 201

Self-Primer Neoprene Coating

A new neoprene-phenolic formulation, *Corrocote 99*, is said to combine the advantages of both neoprene coatings and paint in a one part, self-cure coating for general maintenance and corrosion control. The coating, which features a built-in primer that eliminates the need for a separate prime coat, requires a minimum of surface preparation. It adheres to almost any clean, dry, oil-free surface; bonds over old paint; and, with the addition of a special inhibitive undercoating, provides good adhesion on rusty metal. Unlike standard neoprene coatings, *Corrocote 99* can be rolled, sprayed, or brushed out and "worked" like a regular paint. Available colors are light gray, tile red, medium brown and jet black. *Chemical Coatings & Engineering Co., Inc.*, West Chester Pike, Edgemont, Pa.



Quickly-Assembled Steel Framing

Bild-A-Flex steel framing makes for ease of assembly in building ladders, garages, racks, work tables, ramps, catwalks and other scaffolding-type structures. The principal component is a 10 or 12 ft length of .080 or .104 gauge steel angle, about 1½ by 3 in., punched with a pattern of elongated holes on a ¾ in. module. The framing member is marked at 3 in. intervals and may be cut conventionally or with a cutter available from the manufacturer. It is said to be possible to bolt up joints exceeding beam capacity and strength may be added by combining sections into T, U or other shapes. According to the manufacturer, one bundle of framing including 100 lineal feet of angle and bolts and nuts to assemble takes up less room than one 10-ft length of 2 by 4 in. lumber. *Republic Steel Corporation, Berger Division, Dept. SB, 1038 Belden Ave., N.E., Canton 5, Ohio.*

more products on page 230

BUSINESS IN MOTION

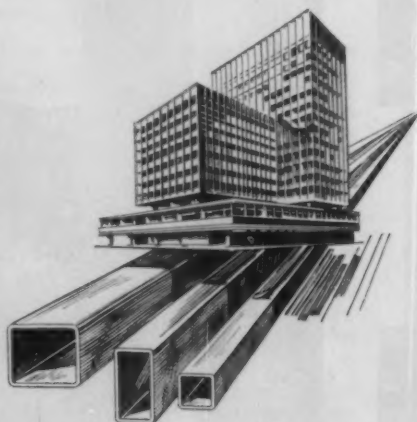
To our Colleagues in American Business . . .

One look at the newest buildings in your community, with their wide expanses of window area, and you realize the tremendous growth of curtain-wall construction in modern architecture. The results of curtain-wall or "skin" type construction have been greater design flexibility, more striking structures, more durable, weatherproof structures, with savings in space and weight, thus an overall saving in cost per square foot.

These savings have been effected through the development of new materials and the ingenious application of standard materials. Take, for example, the increasing use of welded steel tubing for framing and window supports. Standard sizes of welded steel tubing in square and rectangular shapes are appearing more and more in structures, from one-story school buildings to monumental skyscrapers. Welded steel tubing, with its lightweight-high-strength combination, has been most economically used in place of more costly structural members. This type of construction has been tested under tornado conditions with perfect success . . . proving beyond any doubt the weather-resistance, safety and effectiveness of its design.

Recently, we were asked by a customer to help solve a problem in curtain-wall tubing. The customer was buying from several sources and had difficulty in getting a uniform product. Radii and other dimensions varied drastically, causing many rejections. By specifying Revere Welded Steel Tubing, this customer tells us, these difficulties were overcome, and the

Revere tubing has proved to be of uniformly excellent quality. Revere has been a major manufacturer of welded steel tubing for over 35 years and can produce practically all of the standard sizes of square and rectangular tubing used for curtain-wall construction, including the popular 2"x2", 4"x4", 2"x4" and 2"x6" sizes. Revere welded tubing also has the advantage of its uniform wall thickness being held to the close tolerances necessary in curtain-wall applications.



In addition to Welded Steel Tubing, Revere also supplies Revere Aluminum Extrusions for use in combination with the tubing in producing the steel tubing reinforced, aluminum covered panels, being used by many architects in curtain-wall skyscrapers with large window areas. Still another application of Revere Metals in curtain-wall construction is to be found in the 325,000 lbs. of Revere Architectural Bronze spandrel sheets used in the newly constructed 38-story,

Seagram Building, New York, New York.

The use of Revere Welded Steel Tubing, Revere Aluminum Extrusions and Revere Architectural Bronze in modern curtain-wall construction are but three examples of "fitting the metal to the job." A function for which Revere has become well known and for which Revere's Technical Advisory Service is qualified to aid in the impartial recommendation of the right metal to do the best possible job at the least cost . . . whether it be welded steel tubing, copper, brass, aluminum or any of the other non-ferrous alloys . . . in building or for industrial use.



REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, New York 17, N. Y.



CONTINENTAL CAN CO., INC. / Metal Division, Research & Development Center, Chicago, Illinois



Leading Research Laboratories across the nation depend on Powers for accurate temperature and humidity control in test rooms and work spaces.

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(cl)



POWERS

Air Conditioning Control System

helps CONTINENTAL CAN COMPANY Research produce the newest ideas in modern containers



Food-testing kitchen above and impartial tasting panels in Continental Can Co.'s laboratory are accurately held at a constant temperature and humidity by Power's control.



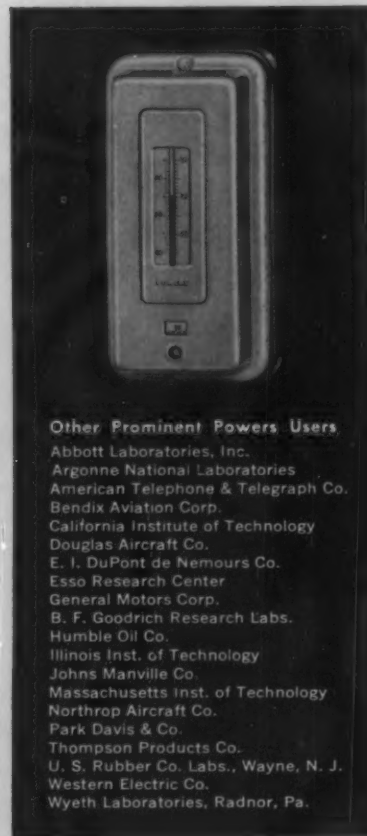
Research experts here are constantly at work making improvements in design, construction, materials and equipment to make better cans for hundreds of products.

Offices, work areas, conference rooms, library, cafeteria, lobby and constant temperature test rooms between -10°F to 130°F are all provided with Powers individual space control.

Central fan systems supply conditioned air to perimeter and interior systems. Under the window type units in the perimeter areas are controlled by Powers Heating-Cooling Thermostats regulating Powers PACKLESS Control Valves. Temperatures at key points throughout the plant are continuously indicated by a strip recorder.

Are You Planning a New Building or modernizing an old one? Solving complex temperature and humidity control problems in this and other prominent laboratories demonstrates Powers engineering skill and know how.

When you ask your architect or engineer to include a Powers Control System you can be sure of TOP QUALITY—there is no better.



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65 Years of Automatic Temperature and Humidity Control



Vertical drawing boards shown below are 15 ft. long by 8 ft. high.

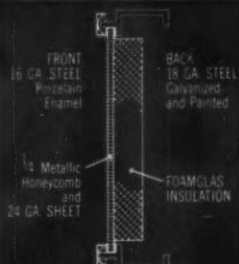


panel flatness

in Porcelain Enamel
the authority is
Ing-Rich

Here are three of many designs used
by Ing-Rich in creating panel flatness.
Let us send more details.

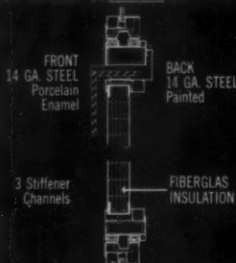
Honeycomb backed



Ford Central Staff Office

Surfaces vary not more than
1/16" in any direction over 15
square feet. Exceptionally
rigid construction and strong
in cross section—with all
components laminated.

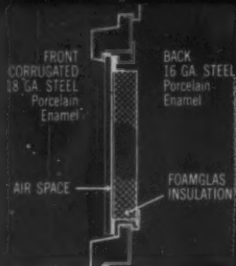
Areas up to 50 sq. ft.



U.S. STEEL Hogestrad Works Office

4' wide by 12' high with
the largest flat panel ever
made for archipelago
Controlled temperature
control and three interior
airlocks and flatness
control.

Corrugated



RCA Cherry Hill

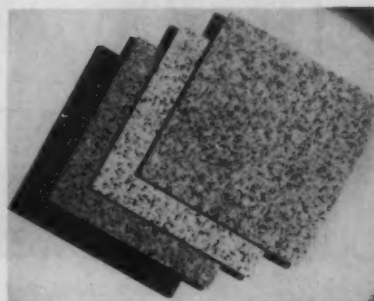
Corrugated sheets create tex-
ture and uniform appear-
ance. From a distance of
200' the effect is of flatness
without highlights. Panels
are 7'10" wide x 3'3" high.

Get this
New
Guide to
Panel
Flatness

Ingram-Richardson

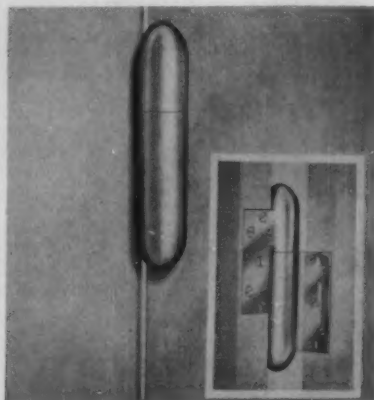
Manufacturing Company
NEW YORK, N. Y.
Branch: Architectural Division
Pasadena, California

Product Reports



Conductive Vinyl Flooring Tile

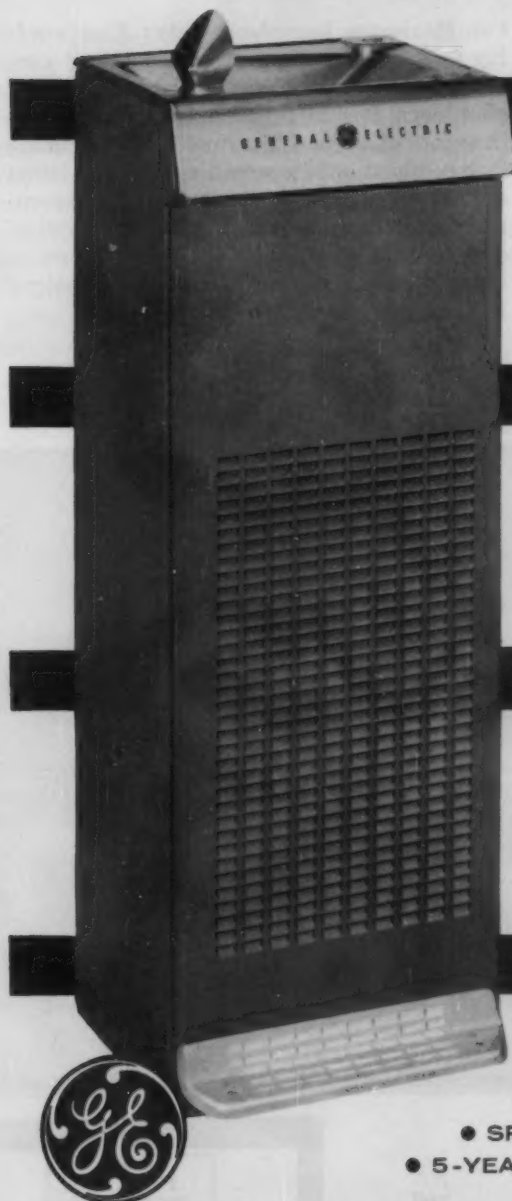
A recent addition to the *Amtico* line of vinyl floor tile is a conductive type, meeting all the requirements of the National Board of Fire Underwriters and the National Fire Protective Association, and reputedly oil and grease resistant. Its conductive qualities, of course, reduce to a minimum the possibility of electrostatic sparks in hazardous locations. The tile is available in several color combinations of black, white, gray and green. *American Biltrite Rubber Company, Trenton 2, New Jersey*



Control Hinge for Light Doors

Providing both closing action and hydraulic damping, these units are said to be easy to install and adjust with simple tools provided with each set. Designed for use with light, residential doors, half-doors or gates, the type 2-H hinge is adjustable for both closing and latching speed. This hinge can be installed in situations where outside hardware might be objectionable or impossible such as in round topped doors or doors with surrounding glass. It is available in several finishes of brass, bronze, or chromium or with paint primer. *Bakewell Products, Dept. 4, 1128 Missions Street, South Pasadena, Calif.* more products on page 234

Make sure you get all these features... specify **GENERAL ELECTRIC WATER COOLERS**



ANTI-SPLASH BASIN

Prevents splashing, spilling, splattering of bubbler stream. Stainless steel—easy to clean.



NO-GROPE PEDAL

Full width design permits water control from any point in front of cooler. Special design prevents scuffed shoes, stubbed toes.



TEMPERATURE DIAL

Just dial the water temperature you like best. Eight different settings offer wide selection.



PLUS

- ADJUSTABLE BUBBLER
- HANDSOME STYLING
- SPACE-SAVING DESIGN
- 5-YEAR PROTECTION PLAN

How many water coolers do you need and where should they be located for best results?

G-E Water Coolers are available in 14 different models with capacities from 2.85 to 21.5 gallons per hour. Call your local G-E Water

Cooler dealer or write to General Electric Co., Air Conditioning Department, 5 Lawrence St., Bloomfield, N. J.

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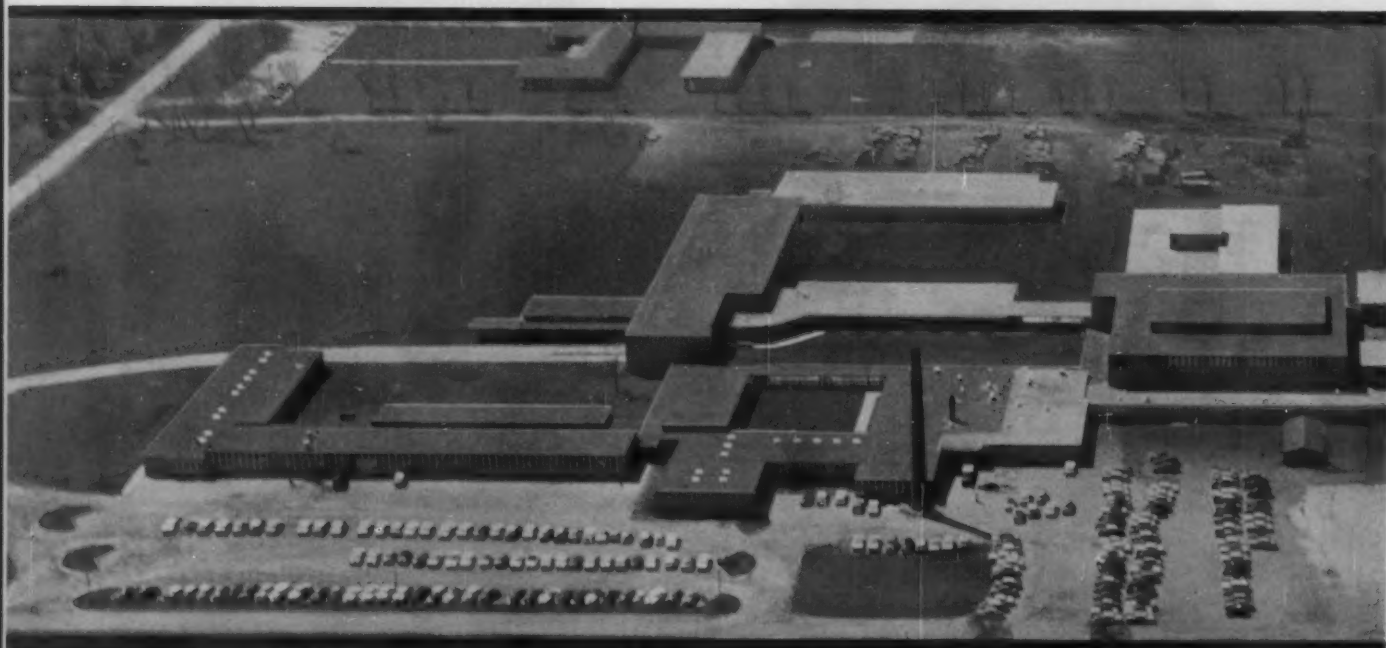
ASK ABOUT Hot and Cold Combinations, pressure and bottle types—also refrigerated compartment models.

Designing Schools?

Here's why to specify

For Maximum Incombustibility: Fire-proofing is a critical requirement in school construction. Because Fesco Board is formed of all-mineral Perlite, processed at temperatures in excess of 1700° F, it provides the ultimate in incombustibility, exceeding the maximum code ratings. Even under extreme temperatures Fesco Board remains physically stable, contributing importantly to fire containment. Fesco Board carries the label of Underwriters' Laboratories, Inc.

ARCHITECT — PERKINS & WILL
Chicago, Illinois



JOB — GLENBROOK HIGH SCHOOL
Glenview, Illinois

GENERAL CONTRACTOR —
JOSEPH J. DUFFY CO.
Tinley Park, Illinois

ROOFER — BROWN & KERR
Evanston, Illinois

FOOTAGE — 114,325 sq. ft.

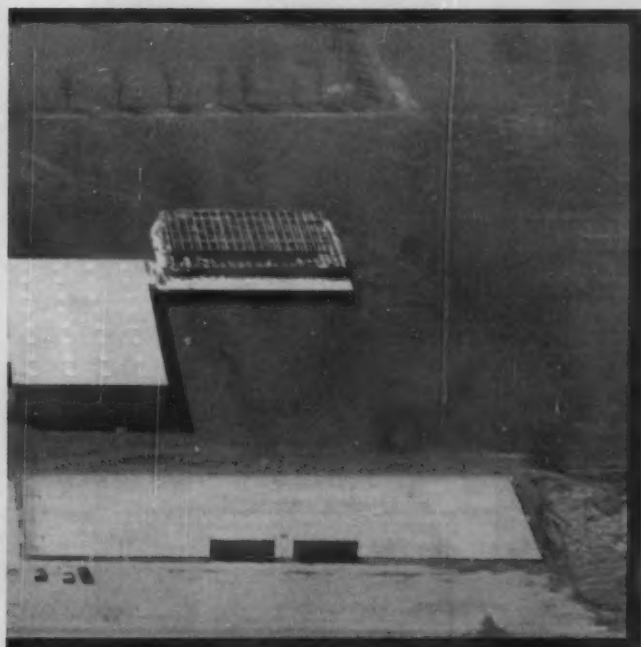


FESCO[®] Roof Insulation BOARD

For Maximum Moisture Resistance: The varying loads of temperature and humidity, characteristic of school occupancy, impose extreme requirements on roof insulation. Fesco Board is designed specifically to meet these extremes in moisture load. Being formed principally of air-entrained beads of glass it has no capillary action. On total immersion for 2 hours Fesco Board absorbs only .06% water by volume. This is vitally important because as the moisture content of insulation rises its insulation value drops.

For Maximum Adaptability: Fesco Board can be applied over any structural membrane — wood, pre-cast slabs, gypsum, steel, etc. It is therefore suitable for all types of school construction in all price ranges.

For Maximum Value: Though Fesco Board has the highest overall performance rating of any roof insulation, it is not the most costly. Because of its permanence, and its speed of application, Fesco Board can be used on the lowest budget school.



Heat Transmission (U) Values

Construction: Roof Deck Type and Thickness	Without Ceiling Underside of Roof Exposed					With Metal Lath & Gypsum Perlite Plaster Ceiling				
	Insulated with Fesco Board					Insulated with Fesco Board				
Fesco Thickness	2 1/8"	2"	1 1/2"	1"	3/4"	3/4"	1"	1 1/2"	2"	2 1/2"
4" Concrete	.11	.14	.17	.22	.27	.19	.17	.14	.11	.10
6" Concrete	.11	.13	.16	.22	.26	.19	.16	.13	.11	.10
1" Wood	.10	.12	.15	.19	.22	.16	.15	.12	.10	.09
2" Wood	.09	.11	.12	.15	.17	.14	.12	.11	.09	.08
3" Wood	.08	.09	.11	.13	.14	.12	.11	.09	.08	.07
2 1/8" Gypsum Fiber Concrete over 1/2" Gypsum Board	.10	.11	.13	.16	.19	.15	.13	.11	.10	.08
2 1/2" Gypsum Fiber Concrete over 1" Rigid Ins. Board	.08	.09	.10	.12	.13	.11	.10	.09	.08	.07
2" Perlite Concrete (1:6) on Steel form	.08	.10	.11	.13	.15	.12	.11	.10	.08	.07
6" Hollow Core Precast Slab	.11	.13	.16	.20	.24	.18	.16	.13	.11	.09
Steel	.12	.14	.18	.24	.29	.21	.18	.14	.12	.10

1. U values are expressed in BTU/SQ. Ft./Hr./Degrees F temperature differential, still air inside and 15 MPH wind velocity outside.

2. Coefficients and procedures used for determining U values are in accordance with current edition of A.S.H.V.E. Guide.

3. For suspended plaster ceiling section, air space between ceiling and deck assumed to be from 3/4" to 4".



F. E. Schundler & Company, Inc.

504 RAILROAD STREET • JOLIET, ILLINOIS

RATED FIREPROOF MATERIALS, ACOUSTICAL & INSULATING

Developers and producers of incombustible mineral products including Ekhtone Acoustical Tile, Fesco Insulation Board, Coralux Acoustical Plaster, Coralux Perlite Aggregates, Micro Pellet Vermiculite, High Temperature Insulating Blocks and Insulating Cement.



lasting protection



St. Paul's School, Seattle, Washington. Architects: Roger Gotteland & Associates, Seattle. Cabot's Clear Cement Waterproofing used.

for exterior walls
above grade

Cabot's

CLEAR WATERPROOFINGS

Cabot's Clear Brick Waterproofing

For dark-colored Bricks and
Masonry

- fills pores, seals surface
- prevents efflorescence
- will not discolor red brick or dark stone
- protects against moisture for 20 years or more

Cabot's Clear Cement Silicone Waterproofing

For Cement, light-colored
Bricks and Masonry

- fills and seals all voids and pores
- offers protection for 20 years or more
- no darkening — no staining

Quality products from Cabot Laboratories
...manufacturing chemicals since 1877

Samuel Cabot

SAMUEL CABOT INC.

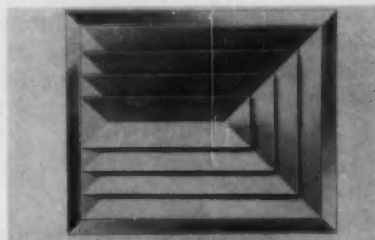
729 Oliver Bldg., Boston 9, Mass.

Please send catalog of Cabot's Waterproofings

Product Reports

Eight Inch Tile Sill or Tread

A new 8 in. unglazed quarry tile sill or step tread unit reduces the number of cuts, grout lines, and small pieces necessary when standard 6 in. units are used for sill or stair treads. Presently available in shades of red, buff tan and gray, the units are 8½ in. deep, 6 in. wide and ¾ in. thick. When used for stair treads, they can be had with a non-skid abrasive surface. *Summitville Tiles, Inc., Summitville, Ohio*



Rectangular Air Diffusers

Titus Series TMD diffusers are available in 1, 2, 3 or 4-way air patterns, in ceilings or sidewalls, for heating, cooling, supply or return or combinations of the latter two. The shapes are square or rectangular. A complete line of accessories such as dampers and deflectors is also available. *Titus Manufacturing Corp., Waterloo, Iowa*



Door for Non-Standard Openings

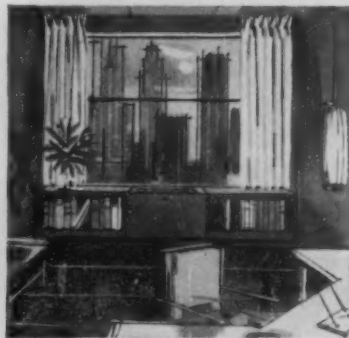
The *SWide-Lite* door solves many renovation problems in head-on fashion. It consists of one standard-width door in a frame with a hinged leaf that is opened only when specially wide clearance is needed. This assembly eliminates the necessity of fitting equal but smaller-than-convenient sized doors into an odd-sized opening and makes it possible to replace easily that type door when renovating. The side light is available in many widths and is delivered as a unit, reducing on-the-job cutting and fitting. *Desco Metals Company, 2264 Wilkins, Detroit 7, Mich.* more products on page 238

York fan coil units adapt to any interior design

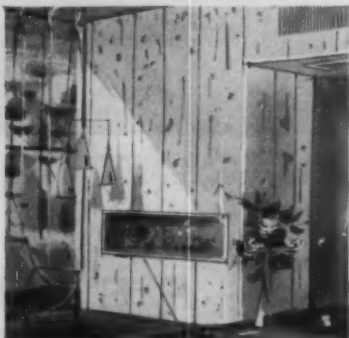
These attractive room treatments are just a few of the many possible with these versatile units. Whether free-standing, free-hanging or furred-in models are selected, you'll find your interior design problems simplified by their compactness and modest water and power-supply requirements.



Free standing unit with decorative casing suits many requirements.



Wall-hung unit with wall-to-wall bookcases is both attractive and functional.



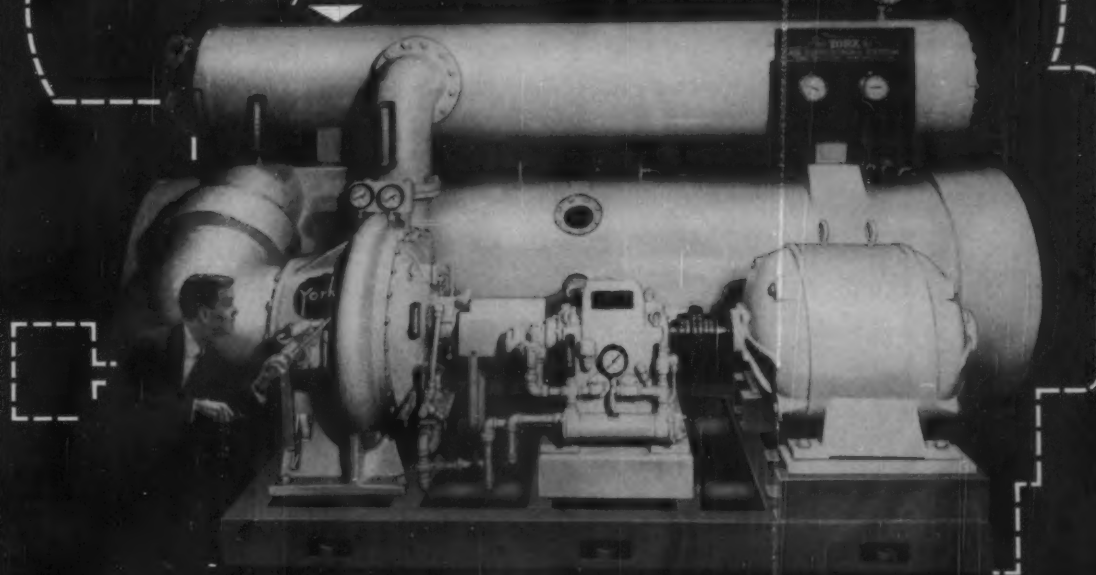
Furred-in ceiling unit solves space problems ... keeps floor-space productive.

YORK 
CORPORATION
SUBSIDIARY OF BORG-WARNER CORPORATION

ANOTHER AIR-CONDITIONING VALUE PACKAGE FROM YORK

Old System

New System



TURBO WATER COOLING SYSTEM

- Number of parts and deadweight cut as much as 400% over previous models!
- Widest range of capacities: 100 to 600 tons . . . with single-stage simplicity!
- Completely automatic adjustment for all load conditions insures long-run economies!
- Quiet, vibration-free operation!
- Any prime mover can be used!

These are features that consulting engineers and contractors have long sought, and now make York's single-stage Turbo Systems an *engineered value* unmatched in the air-conditioning industry:

EASIER INSTALLATION! These compact, lightweight systems require no special foundations; occupy a minimum of space. The advanced single-stage compressor out-performs multi-stage systems twice its size . . . and does away with such equipment as flash coolers, extra float valves, extra piping and its insulation.

MORE ECONOMICAL PERFORMANCE! Stable operation under all load conditions is assured. York Turbos can be run completely by automatic capacity control . . . without super-

vision. Complicated control devices have been eliminated. There are no oil pumps to start.

SIMPLIFIED MAINTENANCE! The York Turbo is more nearly hermetically-sealed than any other centrifugal system. Contamination of the refrigerant is positively prevented. The use of a lightweight aluminum rotor (the only moving part)—and a small, flexible shaft coupling reduces wear. All running parts are removable as a package for inspection . . . are readily accessible without disturbing refrigerant connections!

These important features are the direct result of York's tradition of designing with the *real cost* of air-conditioning in mind. They are just a few of the many you and your clients may want explained in detail. Check your classified directory for your local York factory representative . . . or write York Corporation, York, Pennsylvania.

YORK
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IN CANADA: CANADIAN ICE MACHINE COMPANY LTD., TORONTO



Millions
Live Better
with York



1

Designed in Timber for Schools of Tomorrow

Permanence, safety, economy of construction and upkeep, beauty, flexibility of design—use any of these yardsticks to measure engineered glulam timber construction by Timber Structures, Inc. and see how well it performs:

Permanent

Seasoned glulam timbers manufactured to engineering detail and joined with engineered connections will last in service far beyond the life expectancy of any school building.

Fire Safe

Natural insulating properties of heavy timbers resist penetration of heat, and the timbers yield strength slowly and stubbornly. Firemen have added time to fight the flames and minimize damage. Timber members do not expand laterally, thus do not collapse outer walls as other materials do.

Economical Construction

Timber members by Timber Structures, Inc. are shop fabricated to full size pattern, and are erected with

minimum jobsite labor. Also they promote the economies of true functional construction. With timber members carrying the roof loads, inexpensive curtain walls are sufficient, and bearing partitions are not required. Ceilings may be eliminated, for glulam timbers add to the appearance of the room, and need not be concealed.

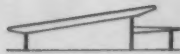
Flexible for Changes

Timber Framing is readily altered and expanded, and easily may be enlarged to meet new conditions of enrollment and curricula.

Easy, Low Cost Maintenance

Timber is not subject to rust and corrosion; so it need not be painted in order to preserve it. Being formed of thoroughly seasoned material, glulam timber members are dimensionally stable and free from seasoning action. Continuing maintenance is not required.

Consult your nearest Timber Structures representative for detailed information and preliminary design data, or write us for the illustrated booklet, "Timber Framing for Modern Schools".



1

Broadmeadow School, Needham, Mass.

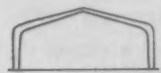
Simple construction is promoted by sloping glulam beams which support heavy timber decking with acoustical tiles on under side. Plastic skylight domes admit daylight into the interior of the room. Architect: Hugh Stubbins Associates, Cambridge, Mass. General contractor: Vara Construction Company, Boston.



2

High School Gymnasium, Vero Beach, Florida

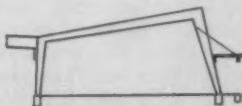
Eight glulam timber arches of 93'-6" span are spaced at 12' and covered with 3-inch tongue-and-groove decking. Architects: Duncan, Steward & McVay and William G. Taylor, associate, Vero Beach, Florida. General contractor: Edward M. Fleming Construction Company, Miami.



3

Library, Chico, California Junior High School

Structural framing features glulam timber arches with arch extensions which permit clerestory lighting on both sides of the room. Architect: Lawrence G. Thompson, Chico. General contractor: Ellis Barker, Salt Lake City.



4

Common Room, Tokeneke Elementary School, Darien, Connecticut

Serves as auditorium and cafeteria. Glulam timber beam-and-column bents support roof deck of heavy timber sheathing. Architects: O'Connor & Kilham, New York City. General contractor: George L. Hickey, Inc., Stamford, Conn.

2



3



4



TIMBER STRUCTURES, INC.

P. O. Box 3782-A, Portland 8, Oregon

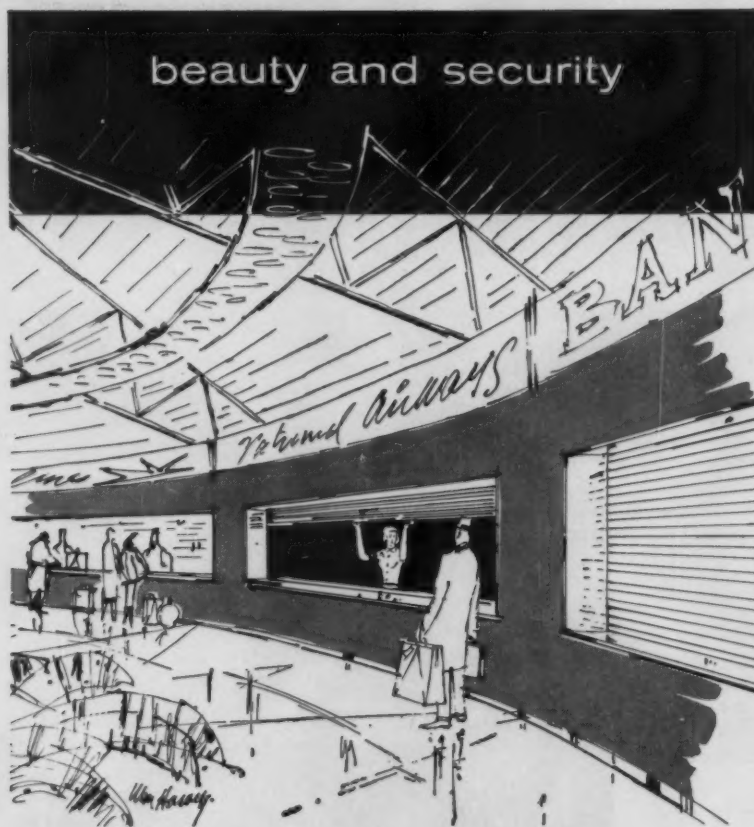


Offices in Ramsey, N. J.; New York City; Boston; Philadelphia; West Hartford; Cleveland; Charlotte; Chicago; Centerline, Mich.; Kansas City; St. Louis; Minneapolis; Des Moines; Wichita; Memphis; Dallas; Houston; Birmingham; Beverly Hills, California; Seattle; Spokane; Denver.

Local Representatives throughout the United States and Canada

TIMBER STRUCTURES, INC. OF CALIFORNIA
Richmond • Sacramento





the pygmee rolling counter door

This is Balfour's new pygmee rolling counter door; it is a new concept in counter closure design.

From its extruded alumilited curtain to its ingeniously concealed hardware and minimum space requirements, the pygmee has been designed to blend with the dignity, elegance and grace of contemporary architecture.

From the exclusive security features of its guides and bottom bar to its "silent-glide" nylon bands and precision balancing, the pygmee has been designed to achieve the ultimate in utility and security.

The pygmee rolling counter door is custom built to your specifications for counter closures in ticket offices, banks, hotels, cafeterias, concession stands . . . wherever maximum security features must conform with the smart, clean lines of today's architecture.

You'll find full specification data on the new pygmee door in Sweet's Files. Or, for your personal copy of the pygmee catalog, write to Walter Balfour today.

Balfour
pygmee doors

Walter Balfour & Co. Inc., Brooklyn 22, New York

Product Reports



Frameless, Cellular Wall

A wall material that is both structure and curtain, *Con-Wall* is formed by interlocking metal sections to make up a 5 in. thick section. The cellular cross-section is said to reduce heat-flow. Coated steel or aluminum may be formed by local sheet metal job shops into the two simple shapes that nest for shipment and lock together upon assembly. The aluminum sections may, of course, be anodized to a permanent, colored, finish. The wall has enough beam-strength to make it possible to space trusses and joists at wider intervals. *Roedter Products, 3875 Pleasant Ave., Hamilton, Ohio*



Axial-Flow Roof Ventilators

A new line of hooded and vertical axial-flow roof ventilators, the former with minimum-height silhouette, are available with wheel sizes from 24 to 48 in. diameter, capacities up to 43,200 cfm and static pressures up to $\frac{3}{4}$ in. Primarily designed for industrial application, the ventilators are suited for buildings with large, open interiors. Higher operating capacity with lower power consumption is claimed as due to higher efficiency fans and cleaner, less turbulent air flow. Backdraft dampers are available and direct drive or belt-driven models are also in the line. *The Trane Company, La Crosse, Wisconsin.*

more products on page 242

321

Mosaic Ceramic Tile

MOSAIC

ENTRANCE AREAS

THE MOSAIC TILE COMPANY

CERAMIC TILE ENTRANCE AREAS

A.I.A. FILE NO. 23-A

Architect: Richard L. Dorman, Tile Contractor: Selecta-Tile, Inc. No. 603

AMERICA IS ENTERING THE CERAMIC TILE AGE

MACDONALD & PARSONS
ARCHITECTS & ENGINEERS



Mosaic Ceramic Tile

ENTRANCE AREAS

A welcome that will never wear out

The entryway is the first impression. The invitation. The architectural preview of a structure. In consequence, it is the appropriate place for architectural decoration. Not applied ornamentation, but integral design, married to the structure.

Because the entrance is usually the heaviest traffic point in a building, permanence of materials and ease of maintenance are basic requirements.

Individuality, too, is a desirable quality of entry areas. Distinctive character created by the designer expresses the function of the structure, the personality of its owners and the mood of its occupants.

No other design material meets all these needs so completely as ceramic tile. And no ceramic tile line gives the designer such broad latitude—in selection of tile types, colors, sizes and patterns—as the complete Mosaic Line.

In addition, the designer knows that the architectural spirit he creates will remain faithfully unchanged for the life of the structure . . . because Mosaic Ceramic Tile is permanent, and is easily maintained in its original state.

Good Ceramic Tile Service—A broad selection of tile is carried in stock locally in the Mosaic Warehouses listed below. You, your clients and your tile contractors are welcome to make full use of our Showrooms.

The complete Mosaic ceramic tile line offers: wall tile in Harmonitone and Bright Glaze; Everglaze; ceramic mosaics in Harmonitone, Velvetex, Granitex, Conductive, Undulate, Everglaze, Faience, Formfree, Medley and Byzantine patterns; Carlyle quarry tile; Decorated glazed tile; Faience; All-Tile Accessories.

The Mosaic Tile Workbook for Architects, Form No. 226, is in Sweet's. For additional data, write The Mosaic Tile Company, Dept. A, Zanesville, Ohio, or The Mosaic Tile Company, Dept. A, 829 N. Highland Ave., Hollywood 38, California.

THE MOSAIC TILE COMPANY

America's largest ceramic tile manufacturer

Member—Tile Council of America, Inc. and The Producers' Council, Inc.

Showroom-Warehouses: Atlanta, Baltimore, Boston, Buffalo, Chicago, Cleveland, Corona, Cal., Dallas, Denver, Detroit, El Segundo, Cal., Fresno, Greensboro, E. Hartford, Hempstead, L.I., N.Y., Hollywood, Ironton, Ohio, Jackson, Miss., Little Rock, Matawan, N.J., Miami, Milford, Conn., Milwaukee, Minneapolis, New Orleans, New York (Showroom only), Philadelphia, Portland, Rosemead, Cal., Salt Lake City, San Antonio, San Diego, San Francisco, Santa Clara, Cal., Seattle, Tampa, Washington, D.C., Zanesville, Ohio.

Representatives: Kansas City, Memphis, Oklahoma City, Pittsburgh, St. Louis.

Factories: Zanesville and Ironton, Ohio; Matawan, N.J.; Little Rock, Ark.; Jackson, Miss.; Corona and El Segundo, Cal.

For free estimates on
Mosaic Tile, see the
yellow pages for your
Tile Contractor, Ceramic



Designer: Wm. Pahlmann Assoc., Inc. Tile Contractor: N. Pietrangelo, Inc.
Plate No. 575



Architect: Thomas C. Wiggers. Tile Contractor: Moormann & Otten.
Plate No. 573

Architect: Peter Kump. Tile Contractor: Alves Tile Co. Plate No. 553





Craig Ellwood, Architect

Marvin Rand, Photographer

CERTIFIED
KILN DRIED
REDWOOD



The contemporary home—

simple in its design, elegant in its use of innately interesting materials—so often features California redwood inside and out. The choice? CRA Certified Kiln Dried redwood, of course.

CALIFORNIA REDWOOD ASSOCIATION • 576 SACRAMENTO STREET • SAN FRANCISCO 11

Liquid Membrane Curing Compound

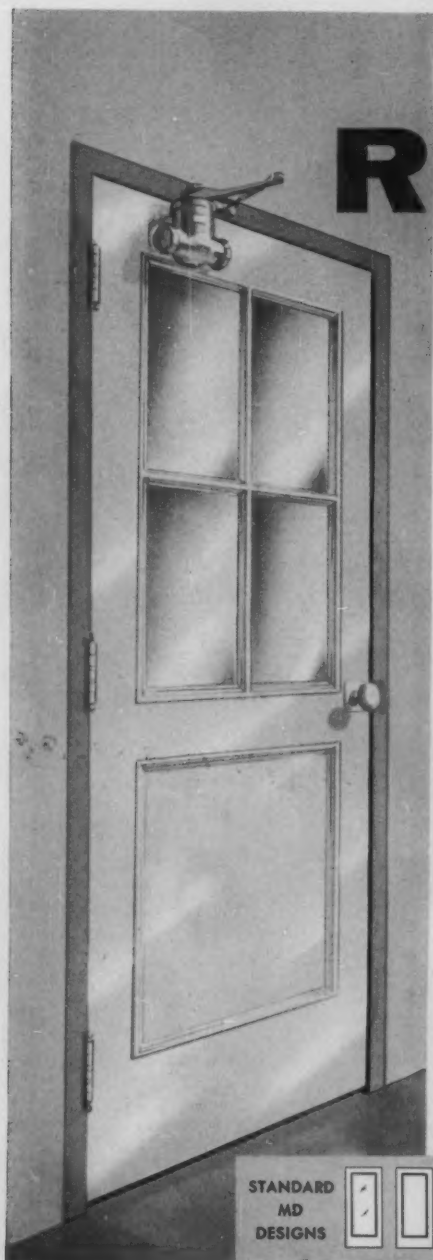
Clear Bond, a liquid membrane curing compound with all the advantages of plastic film, is said to offer an entirely new approach to the problem of curing concrete. A colorless quick-drying liquid that is applied to the concrete floor as soon as it has been troweled, it penetrates the concrete and forms a seal on the surface which prevents the moisture from escaping. According to the manufacturer, *Clear Bond* effectively hardens and seals both old

and new concrete floors. Its speed and ease of application are also said to reduce curing costs. *Guardian Chemical Co.*, P. O. Box 1354, Atlanta 1, Ga.

Electronic Lighting Control

A new type of stage and TV lighting control, *Lumitron*, may be used with any suitable kind of power amplifier bank to control light intensity, or with any suitable servo-mechanism to control light color, focus, position, etc. For storing and controlling

light variables, all-electronic digital readers are used in conjunction with printed, pre-marked cue cards of the computer-card type. *Lumitron* is said to be capable of indefinitely expandable storage or pre-setting. Each control circuit can provide thirty different possibilities; each cue card controls up to fifty circuits. At least two card readers are supplied with each system—an "active" reader can control circuits while a "preview" reader indicates the next circuits to be reached by the manual fader. The system is custom-designed and self-contained in a control console. *Lumitron Div., Metropolitan Electric Mfg. Co.*, 2250 Steinway St., Long Island City 5, N. Y.



RICHMOND HOLLOW METAL DOORS

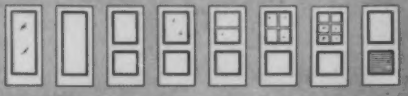
CUSTOM-BUILT TO FIT BUDGETS

These fine quality doors can be custom-built to desired sizes at competitive prices. They are specified by prominent architects for many well-designed industrial, commercial and institutional buildings. Made with or without Underwriters' Class B, C, D, or E Label. 16 gauge steel construction in either panelled design ("MD") or flush ("FD"). List of recent installations gladly sent to any architect requesting it.



**RICHMOND FIREPROOF
DOOR COMPANY**
RICHMOND, INDIANA

STANDARD
MD
DESIGNS



Fiberglass Skin for Walls

A process has been developed that has strong covering powers for application over poured concrete with form marks or coarse aggregate or scorched or other badly marked surface. The *Zolmat* system is a method of applying a resin-bonded fiberglass mat to a wall surface so that a tough covering results that hides minor inequalities and previous surfacing materials and provides a good painting surface. The mat is applied first and the bond material is brushed or rolled through it, the joints are cut and rolled and the end result is said to be a strong, smooth, homogenous finish. The manufacturer recommends that their multi-color paint be used as a final finish coat. *Zolmat Process Inc.*, 3411 East 15th St., Los Angeles, Calif.



more products on page 246

"I always
specify
Hako
floor tile"



Building owner:

"Traffic on some floors will reach a couple of thousand a day. Plenty of cleaning, too."

Architect:

"Want to settle that problem? And save money, too?"

Building owner:

"You're talking my language. Got an answer?"

Architect:

"Sure do. I recommend Hako Vinyl-Asbestos tile. It's tough. It's economical. Stands up to cleaning — and cleans easy."

Building owner:

"Don't forget that I want this building to have a class look."

Architect:

"Hako will give it to you. The right choice of color and the right selection of floor patterns — you'll get a class look."

Building owner:

"Why Hako?"

Architect:

"Me, I like to be sure. Hako Vinyl-Asbestos or asphalt tile gives the kind of satisfaction I want my clients to have. That's why I always specify HAKO."

HAKO BUILDING PRODUCTS

A DIVISION OF MASTIC TILE CORPORATION OF AMERICA
Houston, Tex. • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.

Asphalt Tile • Vinylflex • CorkAlike • Parquetry
Poly-Krome Tile • Coronet Plastic Wall Tile



Hako Building Products
Dept. HB-7, P.O. Box 128, Vails Gate, N. Y.

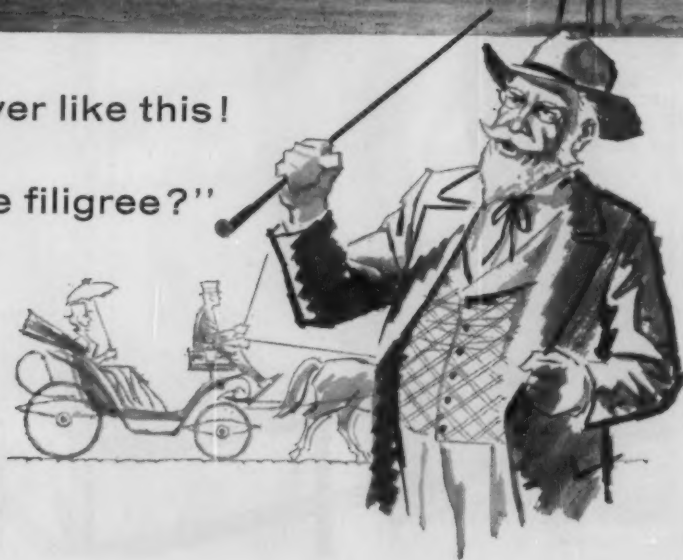
Please send me free samples and full information
about Hako Tile Flooring.

NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____



"New Orleans was never like this!

What happened to the filigree?"





Architects: Goldstein, Parham & Labouisse, and Favrot, Reed, Mathes & Bergman, New Orleans, La.

It's still in the French Quarter, Colonel, but up here at City Hall we need a practical form of architecture—practical, but still beautiful. The new City Hall is the first of a proposed five-building civic center—an excellent example of functional modern architecture. It is especially functional in the extensive use of glass for the vision and spandrel areas.

SOLEX®—Pittsburgh's heat-absorbing glass—in the windows keeps the interior cooler and more comfortable. And SPANDRELITE®—Pittsburgh's glass in color—brings a new-found beauty to the exterior, provides a "glass skin" that is exceptionally strong, durable, and weather and corrosion-resistant.

Another Pittsburgh product used in this impressive building is

the PITTCOMATIC® automatic door opener. With this hinge, doors open at a feather touch. What's more, the PITTCOMATIC is the easiest device to install and maintain . . . the safest to operate.

In your architectural plans, consider Pittsburgh Plate Glass Company products. You'll find them basic in drawing up any building scheme. Our Architectural Representative nearest you will be pleased to assist you in solving any problem confronting you. Call on him. There is no obligation on your part.

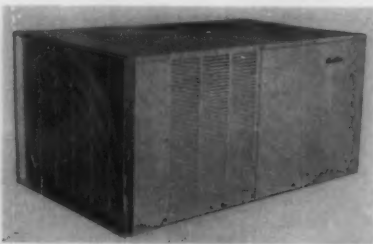
PITTSBURGH GLASS

... the basic architectural material



SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED



Three Heatpump Models

A series of heatpumps specifically designed for this purpose has three

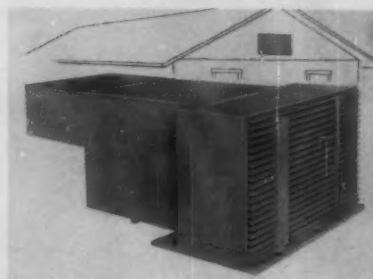
models of 2, 3½ and 5 horsepower. The *Tuckaway* series is designed for mounting in crawl spaces, attics and other restricted spaces. Special provisions incorporated in the design, with the primary use as a heatpump in mind, include such features as a de-icing system that does not run longer than necessary and has a heater to keep the condensate from freezing in cold weather. Machine components are designed for efficiency in both heating and cooling cycles, duplicating where necessary. Accessory electric heaters may be

installed when necessary, with coordinating controls operated by outside temperature bulbs. *Perfection Industries, Division of Hupp Corporation, 1135 Ivanhoe Road, Cleveland 10, Ohio*



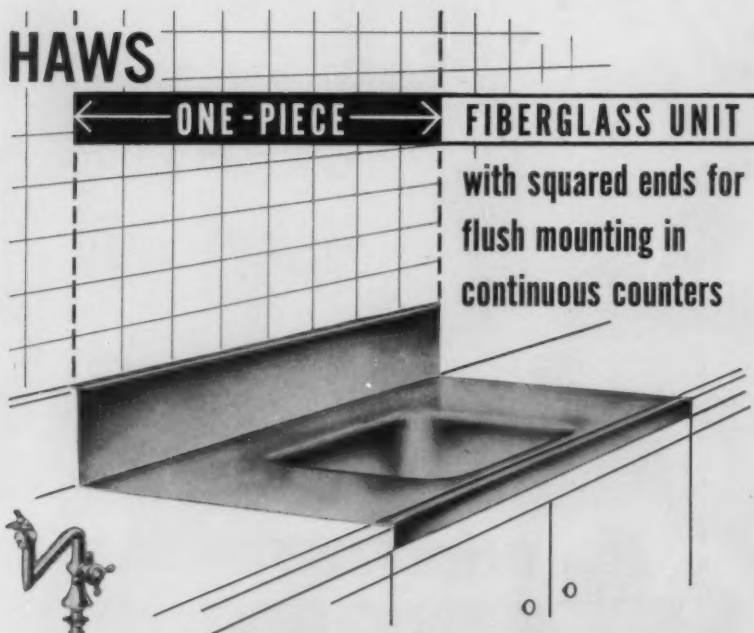
Low Packaged Cooling Tower

A new cooling tower in the 5 to 150 ton capacity range is low in design and is available with colored or translucent side panels. The *siLOWette* tower is a counter-flow, mechanically induced draft assembly with propeller fan and vertical discharge. The side panels are removeable and the bearings are air-cooled. When cooling requirements exceed 150 tons, two or more of these towers may be flange-assembled to form a multi-cell tower. *Dover Manufacturing Co., 3117 Weatherford Avenue, Independence, Mo.*



Heat Pump of Compact Size

The Model 1103-4 packaged air-to-air type heat pump consists of a 3 hp air conditioner with a refrigerant reversing valve. A supplementary duct mounted electric heater is offered as an accessory and when so installed gives a total of four sets of conditions under which the equipment will operate; cooling only, reverse cycle only, reverse cycle plus supplemental heat (outside air below 45 deg F.), and supplemental heat only (outside air below 25 deg F.). The unit is shallow enough to be installed in crawl space, basement or attic. Total unit, including supplemental heater, weighs less than 700 lb. *Airtemp Division, Chrysler Corporation, 1600 Webster Street, Dayton 4, Ohio*



DRINKING FOUNTAINS



PANTRY FAUCETS



LABORATORY FAUCETS

For commercial, school, industrial and residential use... HAWS Series 2800 is a one-piece fiberglass molded unit with integral receptor and deck-top. No cracks or joints for water accumulation. It's specifically designed for simple installation in continuous counters; squared ends butt snugly against adjacent counters. Decks slope to receptor for complete, unhindered drainage.

Fiberglass finish is colorful and durable! You can choose from five decorator colors at no extra cost! Choose your pantry faucet and fountain fixtures, too, from HAWS complete line of facilities for every purpose.

ARCHITECTS, BUILDERS, SCHOOL OFFICIALS... here's an idea worthy of your attention. Write for illustrated literature, today.



DRINKING FAUCET COMPANY

1441 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

*In the finest bathrooms
you'll find*

HALL-MACK®
accessories

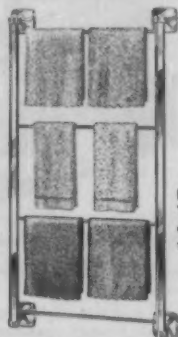


Wherever you are—in tract homes or custom-built luxury homes—you'll find Hall-Mack accessories in the bathrooms.

One reason is that architects, contractors, and builders rely on the beautiful utility of these world-famous accessories. Another reason is that customers are pleased and like their quality and convenience. Crafted from original ideas and designed in a wide range of styles to suit your needs and tastes . . . for modernizing or building . . . these gleaming fixtures are a solid first choice. No wonder folks from Cape Cod to Carmel are asking for Hall-Mack, the world's finest bathroom accessories. For finer bathrooms everywhere, rely on Hall-Mack bathroom accessories in sparkling chrome!



New chrome plated
Shower Recess Unit —
handy, safe spot for
shampoo bottles, etc.



New chrome
Towel Ladder gives
extra towel space
so often needed.



Hall-Mack's
new Concealed
built-in-the-wall
Scale is just
plain handy and
convenient.

HALL-MACK COMPANY
Division of **TEXTRON INC.**

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☐ Please send your **FREE** color booklet of new bathroom ideas

NAME _____

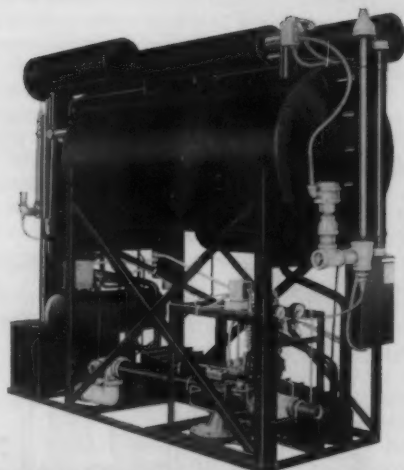
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CITY _____ ZONE _____ STATE _____

Sold by leading plumbing, tile, and hardware dealers everywhere.



ARCHITECT: JOHN F. STANN; CONSULTING ENGINEER: J. B. WYBLE; BUILDER: SAW EIS



Check these facts about the 25-ton **Arkla-Serrel** Cooler

- A compact unit, easy to install and light enough for rooftop installation.
- Costs are low for installation, operation and maintenance. No specially trained operating or maintenance personnel are required.
- Can be installed singly or in banks to fit any size installation.



“...now we’re cooling with **GAS!**”

Arkla-Servel Gas Air Conditioning keeps customers cool and operating costs down at the Motel Washingtonian

“While we were planning the Motel Washingtonian, we made a complete study of all potential equipment,” states Sam Eig, builder and corporation president of this modern motel near Washington, D.C. “We knew we wanted gas for cooking and heating, and after our investigation, we found gas best for *all* operations.”

For air conditioning, the specifications called for Arkla-Servel gas absorptive coolers. “With our Arkla-Servel units, we have no maintenance problems,” adds Mr. McKeever and Mr. Eig. “And we were able to tie them into our heating system without worrying about special housing, vibration, or noise. Our one central system cools in summer, heats in winter to provide us with a quiet, year-round economical operation.”

With the new Arkla-Servel gas absorptive cooler, your clients get extra—even exclusive—advantages that only a gas cooling system gives.

- High efficiency at all times—even during the light loads.
- Constant temperature control.
- Instant automatic adjustment to match actual cooling requirements.
- Dependability of fuel service at all times.

Gas absorptive cooling can put your commercial and industrial clients' heating plant on a year-round paying basis, too. For specific information, take advantage of the consulting services provided by your gas company. They have trained specialists who have been working with architects and engineers for years. Check the facts about gas and you'll see—modern gas air conditioning out-performs all other fuels. *American Gas Association.*

LUMI-POSTTM

A NEW IDEA IN OUTDOOR LIGHTING

that is
MULTI-
PURPOSE
and

VANDAL PROOF

Here's a unit that defies vandalism due to its shatter-resistant Plexiglas diffuser. Attractively and functionally designed to withstand the wear of outdoor use, and to provide choice of Silvered Bowl Incandescent, Mercury Vapor or Circline fluorescent light sources for correct light output for most every need.

In addition to uses shown, LUMI-POST is ideal for gardens, entrances, park paths, patios, gas stations, etc.

Note these plus features

- Lighter in weight than glass units
- Easiest to service
- Weather and insect sealed
- Illuminates large area

For complete details send for Bulletin S158



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SILVRAY LIGHTING, INC.
BOUND BROOK, NEW JERSEY

Office Literature

continued from page 202

Corp., Batten, Barton, Durstine & Osborn, Inc., Advertising Agency

HONORABLE MENTION

CHURCH SPIRES, Overly Manufacturing Co., W. S. Walker Advertising, Inc.; SHADING THE SUN THE BEAUTIFUL WAY, Mo-Sai Associates, Inc., David W. Evans & Associates, Adv. Agency

Special Hazard Fire Protection

Discusses recognition of "special hazard" areas; describes the various types of fire extinguishing systems (water spray, foam, carbon dioxide and dry chemical); and outlines factors affecting their use in particular applications. 42 pp. Grinnell Co., Inc., Providence 1, Rhode Island*

Lightolier Portfolio (A.I.A. 31-F-23)

Forty-page "Portfolio of Decorative Lighting Fixtures" presents Lightolier's line of custom-like lighting fixtures. Fixture groups are shown in color, with complete descriptions and dimensions. Lightolier, Inc., 346 Claremont Ave., Jersey City, N. J.*

Catalog of Built-In Wood Cabinets

(A.I.A. 19) Technical manual includes a discussion of woods and their comparative merits for cabinet-making; a section on cabinet design and details; illustrations of suggested cabinets for various purposes; and a standard form for wood cabinet specifications. 40 pp. Southern California Assn. of Cabinet Mfgs., 9126 So. Western Ave., Los Angeles 47, Calif.

Ceco Steeldomes (A.I.A. 4-E-6)

Technical manual on Ceco's Steeldome units for forming "waffle" type two-way slabs contains necessary design data and information on erection procedures. 16 pp. Ceco Steel Products Corp., 5601 West 26th St., Chicago 50, Ill.*

Highway Bridges of Steel

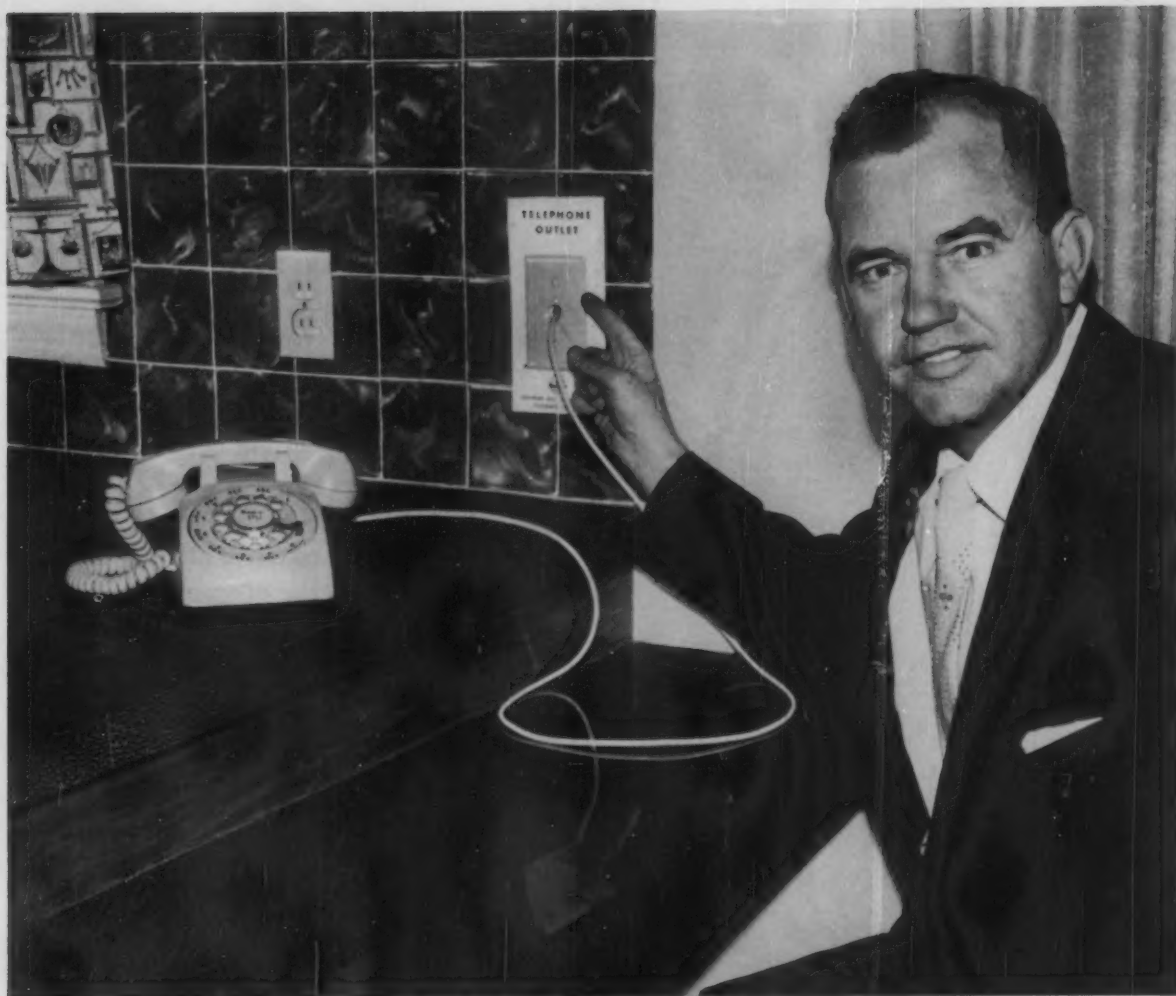
Discusses various aspects of structural steel bridge design, with photographs, spot drawings and selected typical details. 32 pp. American Institute of Steel Construction, 101 Park Ave., New York 17, N. Y.*

Lupton Metal Windows and Doors

Describes and gives details and specifications for complete line of Lupton metal windows and doors. 44 pp. Michael Flynn Mfg. Co., 700 East Godfrey Ave., Philadelphia 24, Pa.*

*Additional product information in Sweet's Architectural File, 1958

more literature on page 256



Mr. Hughes points to the kitchen telephone outlet in one of his new "Chestnut Hills" homes, near Greenville.

"For very little cost, telephone outlets add a big sales plus"

—says JACK HUGHES, Builder, of Greenville, S. C.

"Concealed telephone wiring is a tremendous sales feature," says Mr. Hughes. "We feature it in our advertising and tell our salesmen to use it as a major sales point. People actually look as much for telephone outlets as they do for electrical outlets.

"To stay competitive we must put in extras—and telephone outlets are an extremely reasonable value to a builder. For very little cost, they add a big sales plus to a home. Prospects can see that

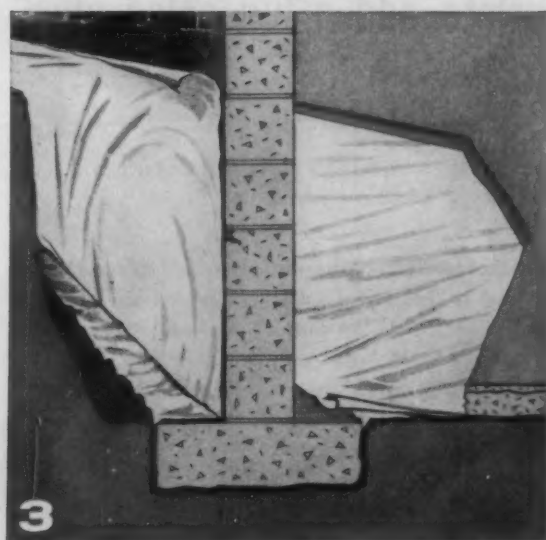
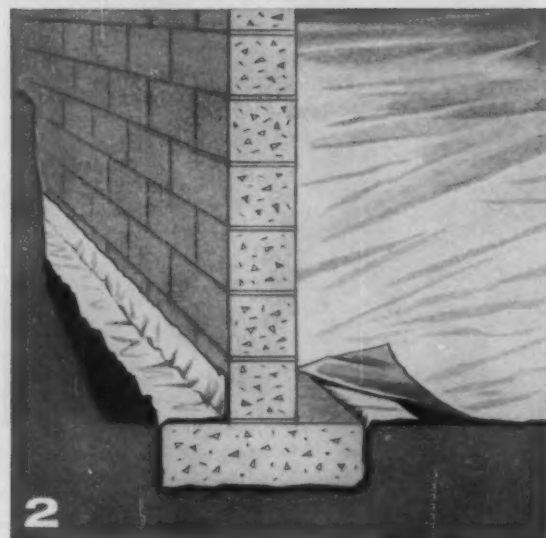
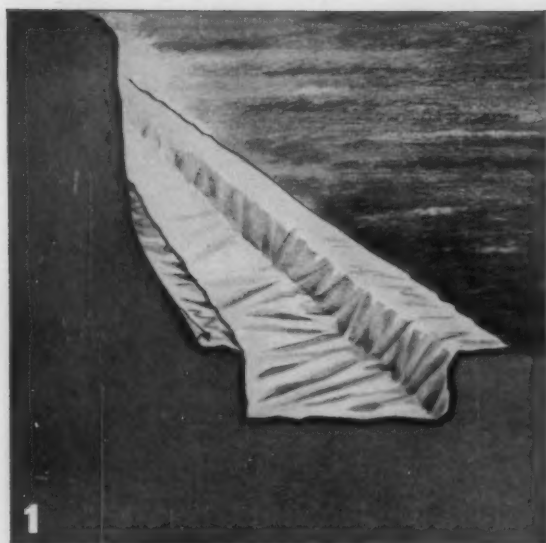
these outlets are going to mean convenience and an attractive telephone installation."

* * *

Your local Bell Telephone Business Office will be glad to help you with concealed wiring plans. For details on home telephone wiring, see Sweet's Light Construction File, 8i/Be. For commercial installations, Sweet's Architectural File, 32a/Be.

BELL TELEPHONE SYSTEM





3 steps to a lifetime dry basement with **VISQUEEN** film

TRADEMARK

1. Trench for footings in ordinary way. Line trench with VISQUEEN film, making sure film extends far enough inside footings for six inch lap, and far enough outside to cover height of footing plus six inch lap. Pour footings.

2. Complete masonry, concrete block or concrete wall. Place moisture barrier of VISQUEEN film over whole basement area, fitting it close to the wall over the VISQUEEN film that extends inside the footings. Pour floor.

3. a. Tar-mop outside of footing and wall. Bring outside lap over base of wall.

b. Take center folded roll and put in place around foundation wall with fold edge down.

c. With top half of film secure in place, let bottom fold drop and smooth it against foundation wall.

No more wet basements from seepage water! VISQUEEN film will protect for the life of the building.

Don't be fooled by inferior film. Look for the VISQUEEN trade mark printed every foot on the selvage. No other film is as free from thin spots and other blemishes.

Only VISQUEEN film is made in seamless widths to 32 feet.

For details of application and film characteristics, write today or use the Information Request Tag.



VISQUEEN film—the first and foremost polyethylene film. A product of the long experience and outstanding research of **VISKING COMPANY** Division of Union Carbide Corporation. P. O. Box 1410, Terre Haute, Indiana

In Canada: **VISKING COMPANY, DIVISION OF UNION CARBIDE CANADA LIMITED**, Lindsay, Ontario.

VISKING and VISQUEEN are registered trademarks of Union Carbide Corporation.



Call the man from Fenestra for
Apartment doors at the lowest installed cost!

Concealed within the sleek seamless beauty of this new Fenestra® Hollow Metal Flush Door is a rigid, rugged, welded structure that gives the door the strength to withstand years of tenant abuse. It's Fenestra's exclusive multi-rib reinforcement!

And, in addition to beauty and durability, you get the lowest installed cost because:

1. You buy a *complete package*—door, frame, hardware, completely machined at the factory to eliminate on-the-job cutting and fitting.
2. Erection is fast—one man with only a

screw driver can hang a door in minutes after the frame is installed.

3. You have a complete selection of door types ($1\frac{1}{4}$ " and $1\frac{3}{4}$ ") of distinctive designs and features—all *mass produced*. Custom quality at *stock door prices!*

Ask your Fenestra representative (listed in the Yellow Pages) to help you in your selection and specification of doors, frames and hardware. Or, write to Fenestra Incorporated, Dept. AR-7, 2252 East Grand Boulevard, Detroit 11, Michigan.

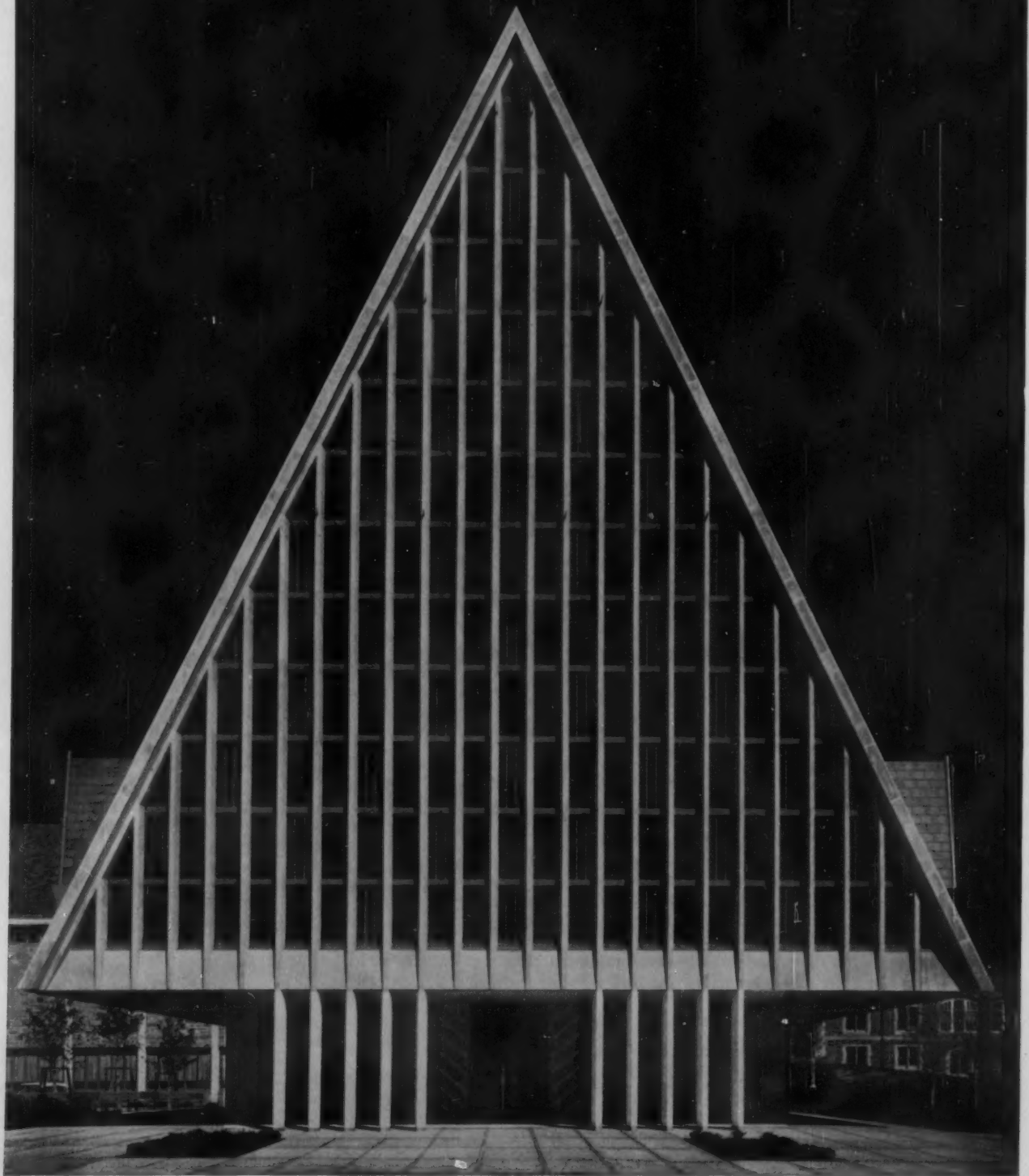


Let the man from Fenestra be your "door man"

Fenestra HOLLOW METAL DOOR
 FRAME • HARDWARE UNITS

YOUR SINGLE SOURCE OF SUPPLY FOR DOORS • WINDOWS • BUILDING PANELS • CURTAIN WALLS

Fenestra...



Announces new custom engineered Curtain Walls of Steel or Aluminum

Here's a bold and imaginative structure . . . an excellent example of how Fenestra® can take your building design—single story or high-rise monumental—and engineer, fabricate, deliver and erect the curtain wall . . . *as a package!*

You have a wide selection of steel or aluminum systems. A choice of subframes, windows and mullion patterns . . . a choice of vents including projected, vertical pivoted, double-hung, top-hung and casement . . . a choice of insulated panels, plain or embossed aluminum, or porcelain enameled steel. All materials, including the panels are produced by Fenestra. The *completeness* of the Fenestra line is a challenge to your creative design ingenuity.

Specifying and ordering curtain walls from a *single responsible source* saves you the time

and trouble of searching out and fitting together components from various sources. Fenestra coordinates production, delivery and erection to eliminate confusion and save time and money.

Your local Fenestra representative can give you the details. Call him today—listed in the Yellow Pages—or write Fenestra Inc., Dept. AR-7, 2252 East Grand Blvd., Detroit 11, Mich.

Fenestra INCORPORATED

YOUR SINGLE SOURCE OF SUPPLY FOR
CURTAIN WALLS • BUILDING PANELS • DOORS • WINDOWS

Fenestra Curtain Wall—Steel subframes with applied projected sash. Lodge Hall and Recreation Building. Masonic Homes, Elizabethtown, Pennsylvania.

Architects—Mitchell & Ritchey, Pittsburgh, Pa.

Contractor—The Pottiger Company, West Reading, Pa.



FOLDING WALLS HELP INCREASE CONVENTION BUSINESS AT ATLANTA'S BILTMORE



Fairhurst®
UNITFOLD®
FOLDING
WALLS



Atlanta's explosive growth as a convention city is responsible for the all-new 10th floor of the Biltmore. 7 of 11 meeting rooms, designed for conferences or private dining, are connected with Unitfold Folding Walls. These areas can be varied to serve groups from 25 to 160 persons.

In the example above, Unitfold is faced with the same paper as the permanent walls (photo 1). Photo 2 shows Unitfold withdrawn and entirely hidden in the pockets at right; contrasting pocket doors add interest to room decor. Photo 3 demonstrates that there are actually two

walls, separated by air space. All the Biltmore walls are of this type — one of the Fairhurst features that means the highest sound retardance known in movable walls. Note close clearance at column. This is Unitfold — solid, rigid, with all the characteristics of a permanent wall.

Write Dept. AR for free information and estimates

John T. Fairhurst Co., Inc.
45 West 45th Street New York 36, N. Y.
FAIRHURST . . . First Name in Folding Walls

Office Literature

Standard Methods of Sampling

... and Testing Brick (ASTM No. C67-57) covers procedures for the sampling and testing of brick for modulus of rupture, compressive strength, absorption, saturation coefficient, effect of freezing and thawing, initial rate of absorption, and efflorescence. 30¢. American Standards Assn., 70 East 45th St., New York 17, N. Y.

Accent on Color

Food and drink equipment planning catalog spotlights latest developments in stool and table design, color selection and installation ideas. 24 pp. Chicago Hardware Foundry Co., North Chicago, Ill.

Digest of Practical Acoustics

Describes and illustrates the use of acoustical tile in various types of spaces; gives acoustical "rules of thumb"; and provides information on the installation and maintenance of acoustical ceilings. 64 pp. United States Gypsum Co., 300 West Adams St., Chicago 6, Ill.*

Armstrong Floors, Walls,

... and Counter Tops (A.I.A. 23-G) Offers comprehensive technical data on selecting, specifying, installing and maintaining resilient flooring materials. 54 pp. Armstrong Cork Co., Lancaster, Pa.*

Silicone Rubber Insulated Cables

Discusses factors to be considered in preparing specifications for special electric cable installations, with particular reference to Nepco-Sil silicone rubber insulated cable. 16 pp. National Electric Products Corp., Gateway Center, Pittsburgh 22, Pa.*


Hand Trucks—Facts and Factors

Bulletin 5008-H outlines points to be considered in setting up materials handling systems. A specification table of platform and pallet type hand lift trucks is also included. 12 pp. Automatic Transportation Co., 149 West 87th St., Chicago 20, Ill.

Acrylic Emulsion Paints

... for Exterior Masonry covers the development of water-thinned paints, acrylic paint formulations, outdoor applications to various types of surfaces, and summaries of exposure test findings. 10 pp. Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.*

*Additional product information in Sweet's Architectural File, 1958
more literature on page 260



Bolta-Floor[®]

Solid Vinyl Flooring

protects itself from any kind of traffic

The beauty of Bolta-Floor solid vinyl is obvious . . . It has natural lustre, rich colors, authentic patterns. But Bolta-Floor's hidden values count even more. Its smooth non-porous surface can be kept fresh and new-looking with far less care even in areas that take a daily beating. Bolta-Floor lays-up square and tight, remains dimensionally stable with no unsightly seams that catch dust and dirt. Bolta-Floor is resilient, recovers quickly from indentation, is quiet and comfortable underfoot. Once you've seen these hidden values demonstrated, you'll join the thousands of performance-minded owners, architects and builders who now specify BOLTA-FLOOR. Write us today for the full story.

THE GENERAL TIRE & RUBBER COMPANY • FLOORING DIVISION • AKRON, OHIO

*The finest quality
flooring for*

■ Stores ■ Restaurants ■ Motels
■ Hospitals ■ Offices ■ Homes



Bolta-Floor is available in a full range of solid colors, marbled and terrazzo patterns in all practical gauges, tile sizes and roll widths. See Sweet's Architectural File 131/Ge.

A continuing series of outstanding schools, churches, office buildings, hospitals and industrial structures using NORTON DOOR CLOSERS



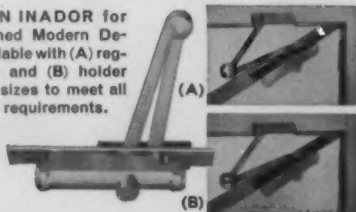
HAARSTICK LUNDGREN AND ASSOCIATES INC.—ARCHITECTS, ENGINEERS
HARDWARE DISTRIBUTOR: WHEELER HARDWARE CO., ST. PAUL, MINN.

SCHOOL PLANNING THAT LOOKS AHEAD SPECIFIES NORTON DOOR CLOSERS

Burnsville School—Independent District No. 191—Savage, Minnesota

Complete Norton Line Meets Every Door Closer Need

NORTON INADOR for Streamlined Modern Design available with (A) regular arm and (B) holder arm...4 sizes to meet all standard requirements.



NORTON 750: New corner design with concealed arms for all type doors, particularly narrow rail doors.



Norton Surface-type Closers are available for all installations where concealment is not essential.



NORTON 703E: Compact surface mounted type...first closer with extruded aluminum alloy shell.

Here's an outstanding new school building—the result of plans that were made to meet some twenty carefully considered objectives. Among them: (1) The building must be functional; modern beauty without waste. (2) It must be of good materials to stand the test of time. These two factors governed selection of door closers.

Interior doors have **NORTON INADOR** Closers mortised into the top rail. Their compact, fully concealed mechanism packs all the rugged dependable power of true liquid-type closers plus the reliability, low maintenance and precision workmanship common to all *Norton Door Closers*.

Exterior doors use Norton Surface-Mounted Closers, modern counterparts of Norton Closers still in daily use after serving continuously up to 30 years and longer in some of America's most famous public buildings. For fully illustrated data on these and other models, consult the current Norton Catalog. Write for it today.

NORTON® DOOR CLOSERS

Dept. AR-78 • Berrien Springs, Michigan

NOW...color and decoration uniform all through



Gold Seal® ends pattern wear in Vinyl Asbestos and Asphalt Tile flooring!



A triumph of electronic automation

This great new tile is made on an entirely new, ultra-modern production line controlled *throughout* by a tremendous electronic master-board especially designed for Gold Seal by GE automation experts. This means such absolutely accurate control that an entirely new standard of precision and uniformity is achieved in color, size, texture, gauge and strength . . . with maximum dirt resistance and gloss.



SPECIFICATIONS

ASPHALT—Size: 9" x 9" and 12" x 12"—
Gauges: $\frac{1}{8}$ " and $\frac{3}{16}$ "—Colors: 17
VINYLBEST—Size: 9" x 9"—Gauge and
Color: $\frac{1}{8}$ "—15 Colors; $\frac{3}{16}$ "—13 Colors
APPLICATION—On, Above and Below Grade

The tile photographed above reveals, by a special test, the most important improvement in this type of flooring since the invention of vinyl asbestos itself. A portion has been "peeled" up to show the center, proving that **THE STRIATION IS JUST AS STRONG THROUGHOUT (RIGHT TO THE BOTTOM) AS AT THE TOP!**

This means that when you install Gold Seal's sensational new Asphalt and Vinylbest Tile, with **FEATHERVEINING Thru and Thru**, your floor will never develop any areas where the pattern has been worn off—as in traffic lanes and near doors—nor show pattern differences from area to area.

No matter how far you wear down this new Gold Seal tile, the intensity and distribution of the pattern never varies—can't be worn off!

And this is all guaranteed by the famous Gold Seal warranty—"Satisfaction guaranteed or your money back."

There is no extra cost for this new, tremendously better Gold Seal tile.

Write to Architect's Service Bureau, Congoleum-Nairn Inc., Kearny, N. J. for technical data and samples of Gold Seal Asphalt and Vinylbest Tile with **FEATHERVEINING**.

F. B. V. factors...

the important difference in
DOR-O-MATIC. INVISIBLE DOR-MAN
AUTOMATIC DOOR OPERATORS



Function

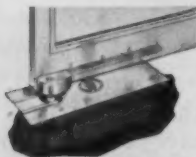
With the INVISIBLE DOR-MAN, openings are smooth, gentle, silent and safe. Precision engineering and highest quality materials mean years of dependable performance, minimum maintenance.

Beauty

Completely concealed, adapts perfectly to all modern architecture. Carpets are now available in five decorator colors and can be monogrammed or trade-marked for personalized identification. TOUCH-O-MATIC handle actuated models are custom made for all types of doors.

Versatility

Single units, double units, in-and-out pairs, carpet or handle actuated—whatever your needs, there's an INVISIBLE DOR-MAN to fit any requirement. Installation and maintenance are easy, inexpensive. You'll have the best when you select the DOR-O-MATIC INVISIBLE DOR-MAN. Write for detailed information.



Manually Operated Concealed in the Floor DOR-O-MATICS are available in 31 models to fit every requirement.

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CANADA: Dor-O-Matic of Canada, Ltd., 550 Hopewell Avenue, Toronto 10, Ontario
EXPORT: Consultants International, Apartado 21397, Mexico 7, D.F., Mexico

Office Literature

Trip-L-Grip Framing Anchors

(A.I.A. 19-B-5) Eight page booklet contains design and use data on Trip-L-Grip framing anchors; information for writing specifications; tables of recommended working loads and maximum joist spans; and illustrations of a variety of secondary connections with 2 in. or larger lumber. *Timber Engineering Co., 1319 18th St., N. W., Washington 6, D. C.**

Specifications for Metal Lath

... and Furring covers solid and hollow partitions; wall furring; metal lath attached directly to wood supports; ceilings; beam and column fire-proofing; and reinforcing for exterior stucco. Descriptive tables summarize the various spans and spacings for supporting metal lath and plaster ceilings. 20 pp. *Metal Lath Manufacturers Assn., Engineers Bldg., Cleveland, Ohio**

Wiring Device Index Chart

Uses index format to give dimensions, catalog information, descriptions and illustrations of a wide variety of specification grade wiring devices. *Arrow-Hart & Hegeman Electric Co., 103 Hawthorn St., Hartford 6, Conn.*

Zonolite Cold Storage Insulation

(A.I.A. 37-D-1) Shows characteristics, uses and application methods of expanded vermiculite as fill or concrete aggregate in cold storage buildings. 8 pp. *Zonolite Company, 135 S. LaSalle St., Chicago 3, Illinois**

Wood Laboratory Equipment

Features new line of wood laboratory equipment, with complete selection data and suggestions for laboratory layout. 84 pp. *Metalab-Labcraft Div., Norbute Corp., 224 Duffy Ave., Hicksville, L. I., N. Y.*

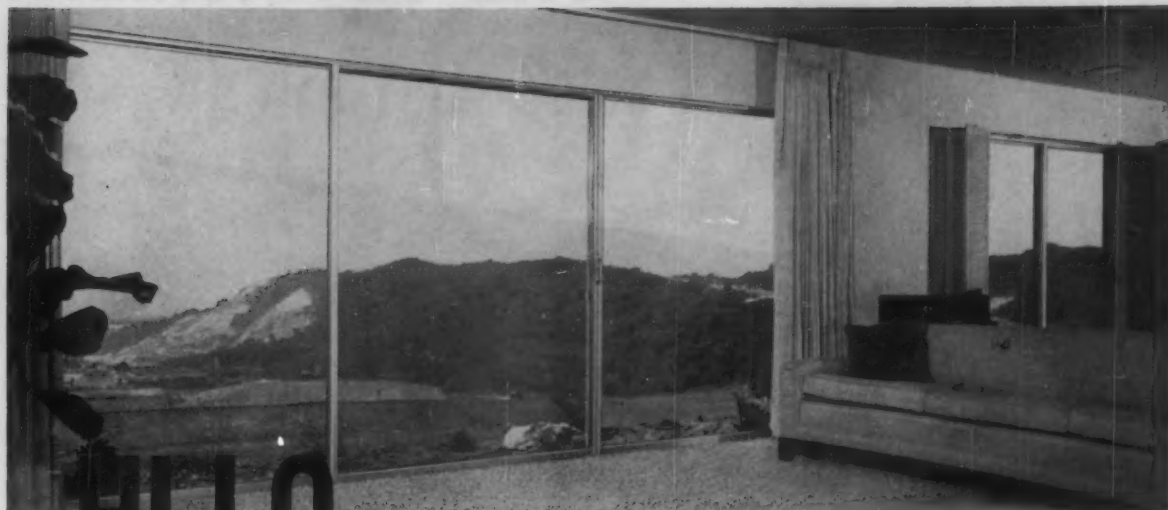
Architectural Guide

... for Understage Chair Storage includes charts, formulae and tables intended to aid in the provision of folding-chair storage. 4 pp. *Space Saver Truck Co., 2608 Peterson Ave., Chicago 45, Ill.*

Chairs of Quality

Describes and illustrates Cramer line of upholstered metal office chairs, office machine stands and stools. 50 pp. *Cramer Posture Chair Co., Inc., 1205 Charlotte St., Kansas City 6, Mo.*

*Additional product information in *Sweets' Architectural File, 1958*



HI-LO, AMERICA'S TOP ECONOMY

"FLOATING" GLASS DOOR . . .

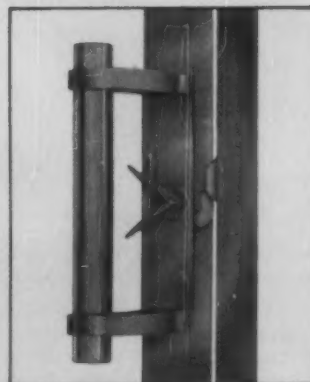
offers more quality features than any other door in its price range!

Hi-Lo (choice of double or single glazing) can be safely specified in any climate for any use requiring sliding glass walls . . . because their positive alignment insures complete weather tight integrity, permanent fingertip operating ease and freedom from maintenance.

Nudor's engineering services are available to help you on any problems that may arise in connection with your use of sliding glass walls. Write for the new Hi-Lo brochure showing the versatile applications and complete details of this fabulous economy door.

Check These Hi-Lo Features Usually Found Only on Premium Quality Doors

- Choice of single or double glaze
- Completely weather tight
- Alumilite finish
- Permanent fingertip operation
- Rigid construction free from torque
- Exclusive sculptured exterior pull
- Jump proof screen
- Improved semi-flat threshold



Richly styled full grip Hi-Lo handle of sparkling lucite. Note "V" shape throwbolt lever, which operates damage proof locking mechanism, and how throwbolt slips under adjustable keeper on jamb.

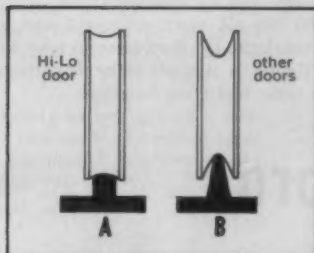
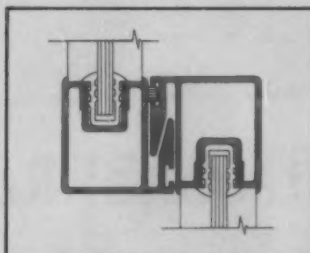
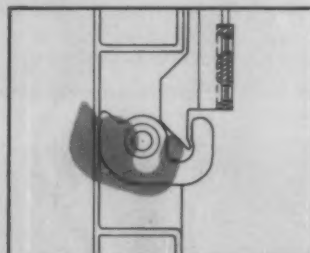


Diagram A. Hi-Lo's wide roller-track contact — positive alignment, longer wear. Diagram B. Pinpoint contact causes indifferent door alignment and greater roller wear.



Weathertight integrity, water and dust resistant; a single plane network of Shlegel wool pile weatherseal and cam action of door on closing assures tightest possible seal.



Exclusive new damage-proof locking mechanism allows keeper to retract throwbolt without damage. Adjustable keeper features permanent locking contact.



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7326 Fulton Avenue • North Hollywood, California

See our catalog in Sweet's Architectural files or write to
Nudor Manufacturing Corporation, North Hollywood, California.

Member SLIDING GLASS DOOR AND WINDOW INSTITUTE

Manufacturers of HI-LO, NUDOR, d'COR Aluminum Sliding Glass Doors and Nudor Horizontal Rolling Glass Windows.

ATA file number 166



THE APARTMENT

Again in 1958 architects and engineers are planning a steeply increased volume of apartment projects. Now is the time to go after their specifications—and *Architectural Record* is the right place to do it.

Contracts for apartment building construction are running 19% ahead of last year, according to F. W. Dodge Corporation.*

This gain comes on top of a 45% upturn in 1957.

Apartment building construction is now accounting for nearly one-fifth of all new nonfarm dwelling units, the largest proportion since 1949.

Significantly, demand factors behind the upsurge in apartment building are likely to become stronger. For example,

U. S. households are increasing by 750,000 a year with an average annual growth of one million seen between 1960 and 1975 • The ranks of *young married couples* are being swelled by 1.5 million marriages annually and marriages will soar in the 1960s • *Urban renewal* is on the rise with 104,166 dwelling units approved under Federal programs last December as compared with 75,000 the year before • *Population pressure* and *land scarcity* are increasing • *Available vacancies* are abnormally low, only 2.8% of all residential units, and could go lower unless construction is stepped up.

To help architects and engineers with their expanding

design opportunities in heavy residential building, *Architectural Record* in the past two years has published 100% more editorial pages on apartment, hotel and dormitory design than any other architectural magazine.

A fact that helps to explain why over 85% of all architect-planned building of this type is in the hands of *Architectural Record's* architect and engineer subscribers.

Architectural Record's coverage of other building types is equally impressive. Ask for coverage data (documented by *Dodge Reports*) on all your architect and engineer planned building markets. Do it in time to take advantage of *Architectural Record's* August issue featuring *schools* and its September issue featuring *hospitals*.



Architectural Record

"workbook of the active architect and engineer"

119 West 40th Street, New York 18, N. Y., OXford 5-3000

* First four months:
1957—\$361,631,000
1958—\$430,538,000



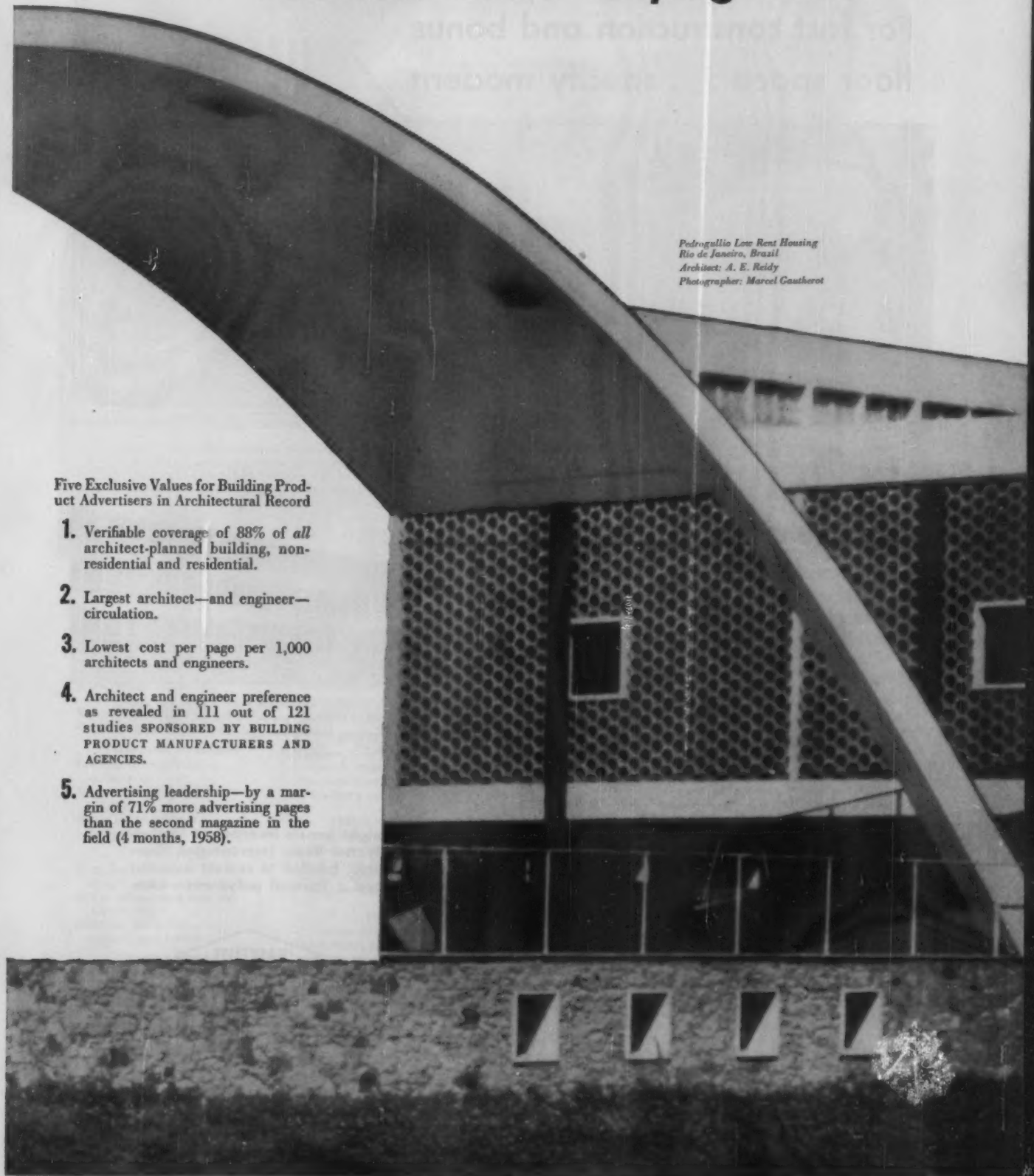
BUILDING MARKET IS UP 19%

Are Your Sales Keeping Pace?

*Pedrogullio Low Rent Housing
Rio de Janeiro, Brazil
Architect: A. E. Reidy
Photographer: Marcel Gautherot*

Five Exclusive Values for Building Product Advertisers in Architectural Record

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Along with being prefinished, Haskelite plastic laminated panels are structurally strong, moisture-proof, noncorrosive, rot-proof, vermin-proof, lightweight and provide a constant insulating value. They add a modern appearance to curtain and window wall buildings . . . are easily installed with a minimum of labor.

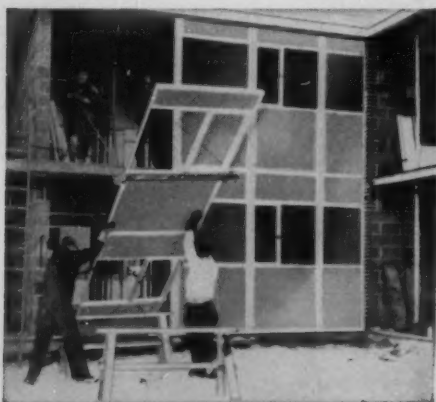
Haskelite panels are available in a wide range of stock sizes and thicknesses, or in special sizes when specified. For the complete story on the advantages of Haskelite panels, write: Haskelite Manufacturing Corporation, Department BQ-7, Grand Rapids 2, Michigan.

Monsanto Chemical Company's new laboratory in St. Louis represents the most thorough use of plastics in a commercial building in the world. Haskelite panels played a basic structural role in this new building. Architect—Holabird & Root & Burgee, Chicago.

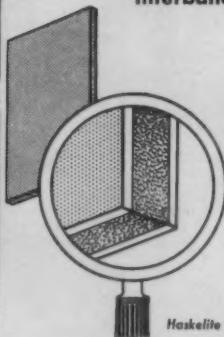


The modern, attractive appearance that can be gained with Haskelite panels is shown here in the students' dormitory at Marion College, Marion, Ind. Architect—Orus O. Eash, Fort Wayne, Ind.

New student housing project at Michigan State University goes up rapidly with Haskelite panels. Entire wall can be installed without using expensive erection equipment. Architect—Manson Carver Associates, Lansing, Mich.



These lightweight panels incorporate Haskelite's own Polyester Resin impregnated fiber-glass cloth faces, bonded to cement asbestos interbands, and a foamed polystyrene core.



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State Line Hotel, Inc., Wendover, Utah
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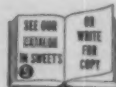
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The Record Reports

On the Calendar

July

- 5-7 National convention, Construction Specifications Institute—Carter Hotel, Cleveland
- 7-11 90th annual convention, American Institute of Architects—Cleveland Hotel, Cleveland
- 20-28 Fifth Congress, International Union of Architects; theme, "Construction and Reconstruction of Towns, 1945-1957"—Moscow

August

- 17-22 National Technical Conference, Illuminating Engineering Society—Royal York Hotel, Toronto
- 18-21 Annual convention, American Hospital Association—International Amphitheater and Palmer House, Chicago
- 18-21 19th annual North American Liturgical Week and exhibit of liturgical arts, crafts and literature—Music Hall, Cincinnati
- 31st XXIV Bi-annual Congress, International Federation of Housing and Town Planning—Liege, Belgium; through September 6

September

- 1-13 Second International Conference on Peaceful Uses of Atomic Energy—Geneva
- 4-5 International Conference on Air Pollution—Hotel Statler, New York City
- 6-14 National Home Week
- 15-19 13th annual Instrument Automation Conference and Exhibit—Convention Hall, Philadelphia
- 22-25 Annual meeting, Institute of Traffic Engineers—McAllister and Columbus Hotels—Miami
- 25-27 Seventh Annual Conference, A.I.A. Western Mountain District—Continental Denver Hotel, Denver
- 25-27 Annual meeting, Porcelain Enamel Institute—The Greenbrier, White Sulphur Springs, W. Va.
- 28-30 (Tentative) Solar Heating Symposium, sponsored by the Association for Applied Solar Energy with the co-sponsorship of the Arizona State College—Phoenix

Office Notes

Bauer and Corbett, Architects, of Newark, N. J., have moved to new



Hotel Americana is owned and operated by Tisch Hotels, Inc., Morris Lapidus and Leo Kornblath, Designers and Architects; Taylor Construction Company, Miami, General Contractors; Markowitz Bros., Inc., Mechanical Contractors;

George O'Mara, Mechanical Engineer. Boiler-burner units installed by Florida Fuel Oil Co., Miami. This luxurious hotel is located in the Bal Harbour section of Miami Beach, Florida.

Petro oil burners are chosen where only the finest can compete

What can a hotel achieve in luxurious living if its designers are allowed to apply the full resources of modern technology and art?

The answer can be found in the new Hotel Americana on the "Gold Coast" of Florida. This "Gateway to the Americas" can well be described as a small city of incredible beauty, graciousness and comfort. Its 475 spacious guest rooms and suites include 30 Lanai apartments, each with its own tropical garden, private entrance and patio. There is a whole series of fine restaurants and supper clubs, lounges and shops, and an

Olympic-size pool surrounded by cabanas and recreation areas.

Petro-powered heating plant

The enormous steam and hot water requirements of this lavish community are supplied by three boilers, fired by Petro rotary oil burners—chosen for their proved dependability. Petro burners are famed for their trouble-free firing of low cost heavy oils, and for their low maintenance costs. Models are also available for dual-fuel gas or oil firing.

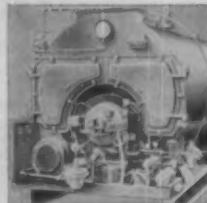
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- Hotel Fontainebleau • Versailles
- Deauville • Dupont Plaza

Petro boiler-burner unit—a complete package, ready to go.

Includes Scotch boiler with forced draft firing system for oil, gas or gas-oil. Mounted on steel skids, with fuel, air and control systems installed and tested at factory. Requires little more than service connections.



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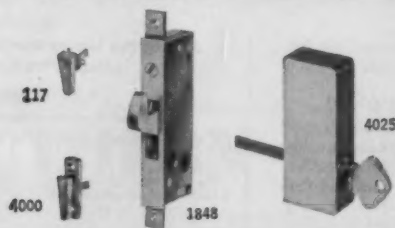
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...at the service of the sliding-door industry

ADAMS-RITE established the concept that sliding glass doors can and should be secured with locking devices as modern and as functional as the doors themselves. Only ADAMS-RITE locking devices fulfill the most rigid requirements—heavy, hooked-shaped deadbolts that are adjustable, that fit inside the door rail, that are operated by positive turn action and, when necessary, controlled by standard cylinders. Residential front door keying or commercial master systems are optional.

The ADAMS-RITE 1848 Deadlock provides each of these important features to satisfy the needs of architect, manufacturer, contractor and final user alike.



The 1848 Sliding Wall Deadlock shown above measures only $3\frac{1}{4}'' \times 1\frac{1}{4}'' \times \frac{1}{2}''$, has a collapsible bolt for protection of door and lock, and operates with positive "feel appeal". To compensate for possible misalignment of door and jamb, bolt projection can be adjusted a full $\frac{3}{8}''$ by simply turning a screw in the lock face. The 4025 cylinder group is a clean-lined outside pull, offering key control that can be keyed-in with most popular cylinder systems.

*Specialists in
Narrow Stile
Locking Devices
for Sliding
and Swinging
Glass Doors*

ADAMS-RITE
MANUFACTURING COMPANY

Dept. AR-78, 540 West Chevy Chase Drive, Glendale 4, California

In addition to being the leading manufacturer of narrow stile sliding and swinging door locking devices, ADAMS-RITE also supplies virtually all the locking devices and handles for commercial and military aircraft in the United States—an overwhelming testimonial to the superiority of ADAMS-RITE design and the lasting strength of ADAMS-RITE products.

The sliding door manufacturers listed below are representative of these in the industry who provide ADAMS-RITE extra quality locking devices as standard equipment.

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ALUMINARE
Aluminaire Company
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PATI-DON
Aluminum Metals Company
1733 Sebastopol Road, Santa Rosa, California

CRESTVIEW
Aluminex, Inc.
2408 Forney Street, Los Angeles 31, California

VACMI
V. E. Anderson Mfg. Co., Inc.
P. O. Box 430, Bradenton, Florida

NU-VU
Bailey-Kelleher Company
500 Bellevue, Detroit 7, Michigan

BELLEVUE BELUS STEEL
BELLEVUE BELUS ALUMINUM, HANNOVA
Bellevue Metal Products
1314 E. First Street, Los Angeles 33, California

SULFPRAY LONE STAR
Biswanger & Co. of Texas
P. O. Box 3051, Houston 1, Texas

BRITT BELUXE
Britt Sliding Door Corporation
2501 Wornton Road, Houston 5, Texas

BELLA VISTA, BELLA'S CHAMP
Bur-Vai Mfg. Co., Inc.
1012 No. Lake Street, Burbank, California

FLEETLITE
Fleet of America, Inc.
2015 Walden Avenue, Buffalo 25, New York

GLAMOUR
Glamour-Glass Wall-Dor Corporation
3040 W. Lawrence Avenue, Chicago 25, Illinois

G. S. D.
Glass Shower Door Co., Inc.
105 W. Wacker Drive, Chicago 1, Illinois

CORONA
H & D, Inc.
6515 Highway 99 So., Everett, Washington

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The Heller Company
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Malibu Mfg. Corporation
P. O. Box 413
El Monte, California

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ARISLIDE
Michter & Pfeiffer Iron Works, Inc.
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Modern Shower Door Company
1804 E. 40th Street, Cleveland 3, Ohio

HUDOR, ORION
Hudor Mfg. Corporation
7326 Fulton Avenue, North Hollywood, California

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Pittsburgh Plate Glass Company
One Gateway Center, Pittsburgh 22, Pennsylvania

HUMAN, CHALLENGER
Roman Metal Products, Inc.
P. O. Box 4477, Tucson, Arizona

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F. C. Russell Company
P. O. Box 26, Columbiana, Ohio

TUREA VISTA
Samuels Glass Company
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Shower Door Company of America
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Slideview Door & Window Company
P. O. Box 409, El Monte, California

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SPECIALUME
Specialume Products, Inc.
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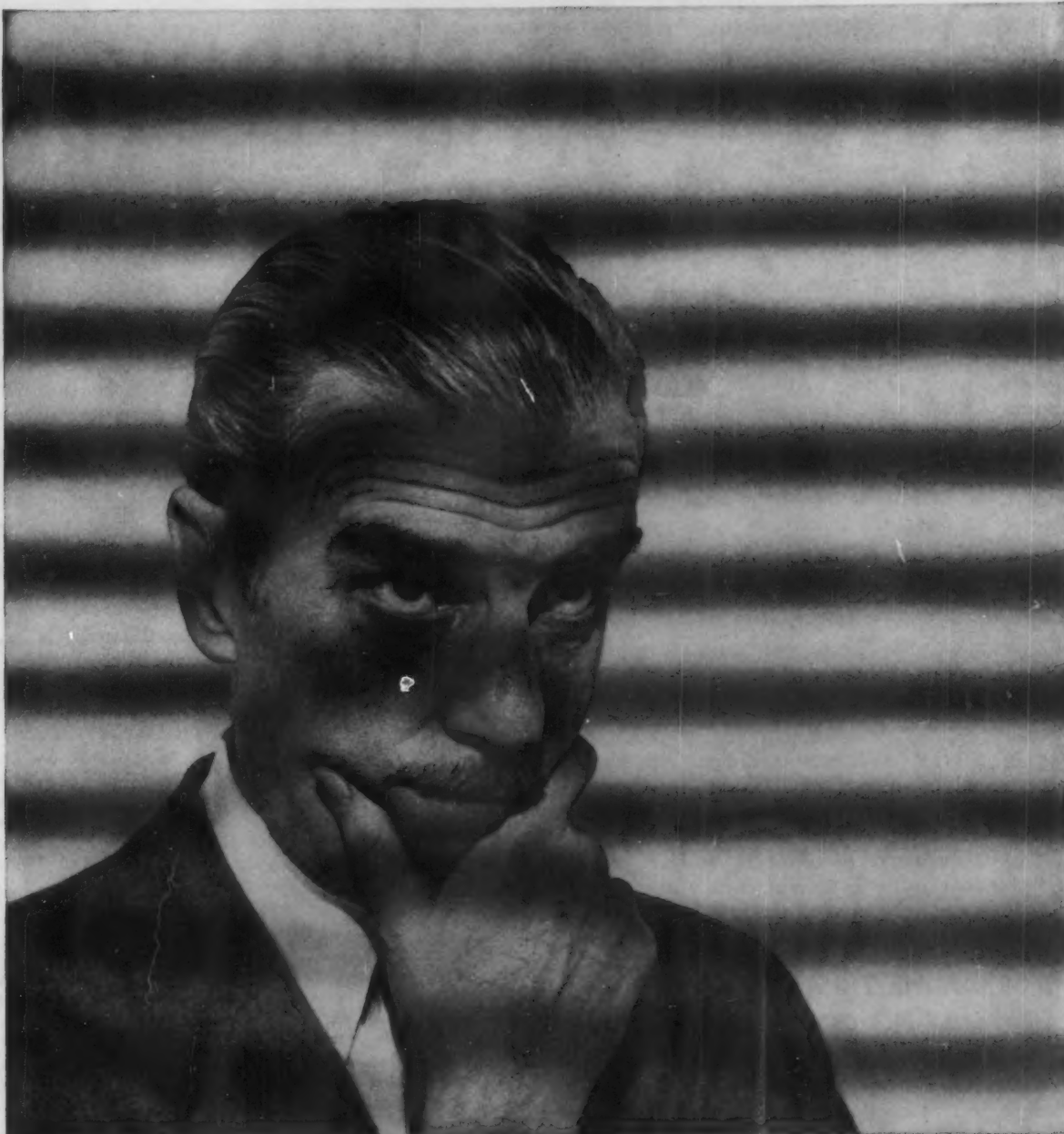
ALL STEEL QUALITY, STEEL FRAME ALUMINUM
Steelbilt, Inc.
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SILVERMAIL
St. Petersburg Glass & Mfg. Co.
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materials, is made by one manufacturer. And it is assembled locally *only* by licensed Flexalum Manufacturers under strict Hunter Douglas quality control. Protect yourself *and* your clients.

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2. Shows you how special problems have been solved, using actual examples. Presents 44 separate new laboratory projects, in all areas of scientific research. These buildings are in all areas of the country, and are owned by corporations, universities, and government agencies. Each is thoroughly described in text, photographs, plans and drawings.

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BRIEF SUMMARY OF CONTENTS

1. PLANNING THE LABORATORY

An 18-page outline of fundamentals by Charles Haines of Voorhees, Walker, Smith and Smith. A study of laboratory equipment as it affects design. Analyses of five plot plans of research centers, including RCA laboratories at Princeton, N. J., and Armstrong Cork Co. in Lancaster, Penna. All 5 shown in numerous plans and drawings.

2. NUCLEAR LABORATORIES

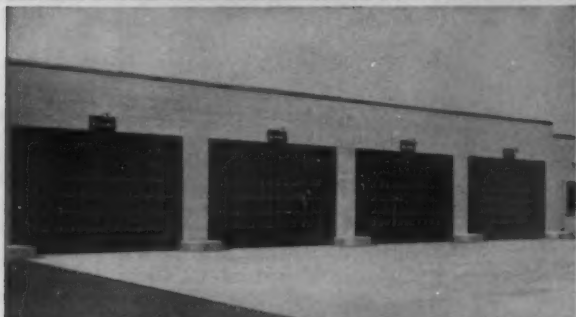
Defines CC (concentrate and confine) and DDD (dilute, disperse, decontaminate) theories. Studies architectural requirements of cyclotrons, bevatrons, and other types of reactors and accelerators. Emphasis on shielding and personnel safety. Many AEC and university buildings shown in photographs and drawings. Much of this information only recently declassified by government.

3. INDUSTRIAL LABORATORIES

The largest section in the book. A total of 20 biological, engineering, chemical, and electronic laboratories. Includes a GE laboratory that won congratulations from its residential neighbors, Union Oil's 14-building complex, with all buildings connected by service tunnels, Corn Products' huge research center with complete pilot plant, and many more. All buildings described thoroughly in text, photographs, and drawings and plans.

4. INSTITUTIONAL LABORATORIES

Owned by government agencies and universities, with the emphasis on pure research. An entire new postgraduate school of research for the Navy at Monterey, Calif. is shown—maximum sharing of facilities by diverse departments and built on a very tight budget. Also a chemical engineering building at the University of Minnesota built on the modular plan, an engineering building at U.C.L.A. with a floor live-load of 600 lb per sq ft, and a dairy laboratory at the University of Wisconsin where a germ-free atmosphere and ease of cleaning were pressing problems.



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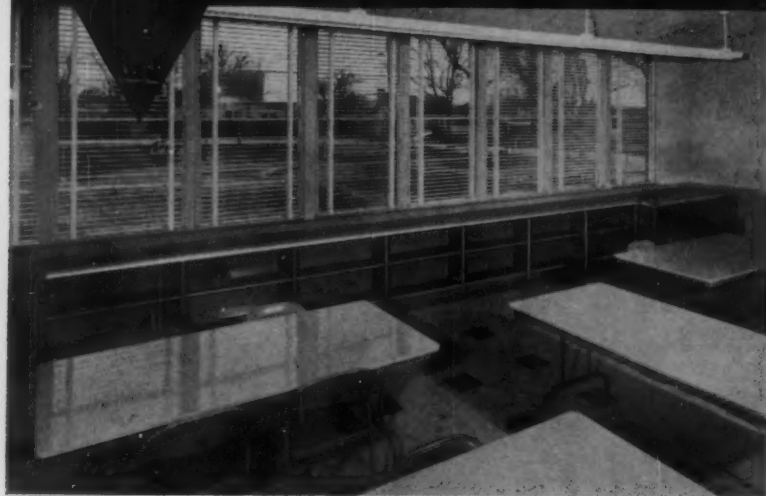
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Photo illustrates, Mingo School Addition, Tulsa, Okla.; Architect: Koberling and Brandborg A.I.A., Tulsa, Okla.; Mechanical Contractor: Palmer Plumbing and Heating Co., Tulsa, Okla.; Mechanical Sub-Contractor: Sand Springs Sheet Metal Co., Sand Springs, Okla.



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See Sweet's Arch. File 30h/No, American Sch. and Univ. Annual C-1/No

The Record Reports

and larger offices on the second floor of the Military Park Building, 60 Park Place, Newark. The firm has been on the second floor of the same building.

Victor Gruen Associates, Planners, Architects and Engineers, of Beverly Hills, Cal., has opened enlarged and remodeled offices at 135 South Doheny Drive, Beverly Hills. Besides the headquarters office, the firm has offices in Detroit, New York, San Francisco, Minneapolis-St. Paul, Honolulu and Miami.

George F. Dalton, formerly of Dalton-Dalton Associates, and Robert A. Little, formerly of Robert A. Little and Associates, announce formation of a partnership for the practice of architecture to be known as Robert A. Little & George F. Dalton & Associates, Architects. The new firm will have offices at 1303 Prospect Avenue, Cleveland 15, Ohio.

Harold Rosen has been named an associate of Kelly & Gruzen, Architects-Engineers, of New York, New York and Boston. Mr. Rosen, a licensed professional engineer, has been chief of the firm's Specification Department since 1956.

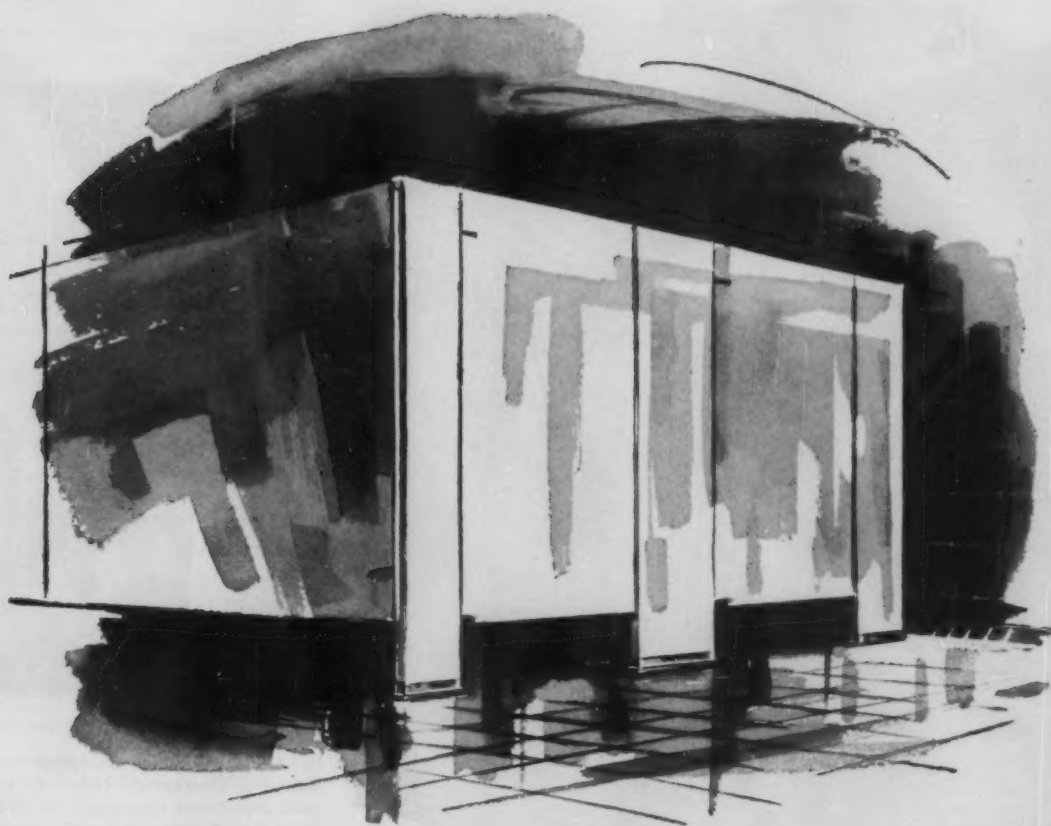
Van Fossen Schwab and Thomas G. Jewell announce their association and the establishment of the new firm of Schwab and Jewell, Architects, with offices at 2506 North Charles Street, Baltimore 18, Md.

John Carl Warnecke, A.I.A., Architect, has announced that Albert Arthur Hoover, A.I.A., has joined the staff. Mr. Hoover had been a partner of Perkins & Will since 1956. The Warnecke firm has offices at 111 New Montgomery Street, San Francisco 5, Cal.

P.C.'s Second School for Salesmen Scheduled Next October

The second architectural sales representatives' institute sponsored by the Producers' Council, Inc. will be held at Ohio State University October 23-25. The first (AR, March 1958, page 24) was a successful full week's school held at Rensselaer Polytechnic Institute in January.

This second institute was originally planned for May: in its postponement the period was trimmed to two and one half days and a decision was made to place more emphasis on architecture as an art, but not less on the architect as a practitioner. Basic idea is that product salesmen could do a better job if they understood more fully the purpose and function of architecture.



for your special jobs
... lustrous, lasting stainless steel
toilet compartments by *Nicholson*

Construction features:

- panels and doors are 1" thick . . . 2 sheets of 22 gauge stainless steel 18-8 type 302 with #4 satin finish.
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- formed edges are sealed with 20 gauge stainless steel continuous locking strips that are Heli-Arc welded.

Specify the best for the toilet compartments in your "special" jobs—specify stainless steel. It has the undeniable quality and appearance that belong with the job that's specified "best throughout".

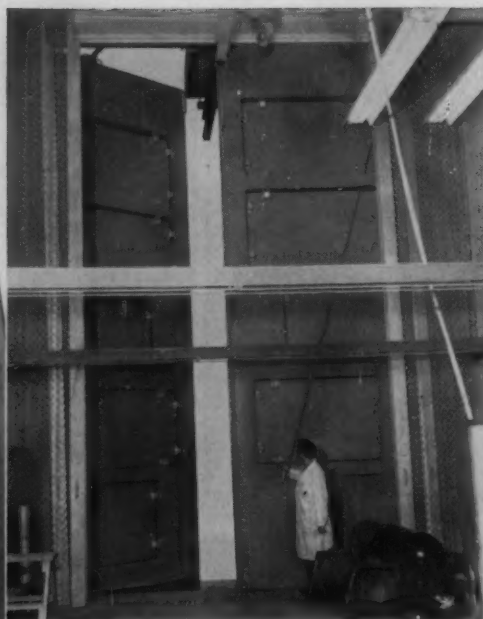
Nicholson stainless steel toilet compartments *do* cost more than conventional ones . . . but they're better looking . . . last a lifetime . . . and are actually more economical over the long haul.

You can count on low installation costs when you use any Nicholson Toilet Compartment. They are designed and constructed for easy adjustment to location contours and for fast assembly.

Specify Nicholson . . . W. H. Nicholson and Company, 12 Oregon St., Wilkes-Barre, Pa. Sales and Engineering offices in 98 principal cities.

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of Wilkes-Barre



HUGE TEN-PANEL double leaf Jamison Sound Reduction Doors in test cell built for hyper-sonic combustion tests. (right) In the event of explosion, blowout panels are forced open to prevent personnel and cell structure damage.

Power Operated Jamison Sound Reduction Doors Protect Against Explosion and High Level Noise

At the Wright-Patterson AFB, Dayton, Ohio is one of the Air Force's newest and most important test facilities devoted to research in the fluid dynamics of air breathing and non air breathing propulsion systems. Jamison Sound Reduction Doors have been chosen here to provide protection from both explosion and high level noise . . . These Jamison doors are built with blowout panels which would be forced open by an explosion, thus dissipating the sudden force of any violent detonation.

Ram jet engine testing, which reaches a noise level of 120 decibels, is reduced by approximately 50 decibels by these same doors. Detonations in test equipment, moreover, are expected to reach pressures greater than 3,000 atmospheres.

This is another example of the successful application of Jamison's knowledge and experience in this specialized field. If you have a noise problem, it will pay you to call on Jamison for a practical, economical solution. A new bulletin describes Jamison Sound Reduction Doors and contains interesting new test data. Write for your copy to Jamison Cold Storage Door Company, Sound Reduction Door Div., Hagerstown, Md.

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southern insulation company
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champaign, illinois—telephone: 6-4234
silbrico corporation, 5901 west 66th street,
chicago 38, illinois—
telephone: reliance 5-3322

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Permalite perlite aggregate plaster—lightweight, easy-working—is the lightest, thinnest and most economical fireproofing for all structural steel...and it gives you your basecoat for interior finishing at the same time.

WEIGHT? An example—1¾" thickness of Permalite plaster on self-furring metal lath gains a 4-hour fire rating...yet on a 10" column weighs only 33 lbs/lineal column foot. The same fire rating gained with concrete requires a 3" minimum thickness, and weighs 249 lbs/lineal column foot.

ECONOMY? Fireproofing with Permalite plaster requires no expensive, time-consuming forms and is quickly and easily applied by hand or machine.

APPROVAL? UL-approved Permalite used as aggregate in job-mixed plaster qualifies for more than 50 UL fire ratings.

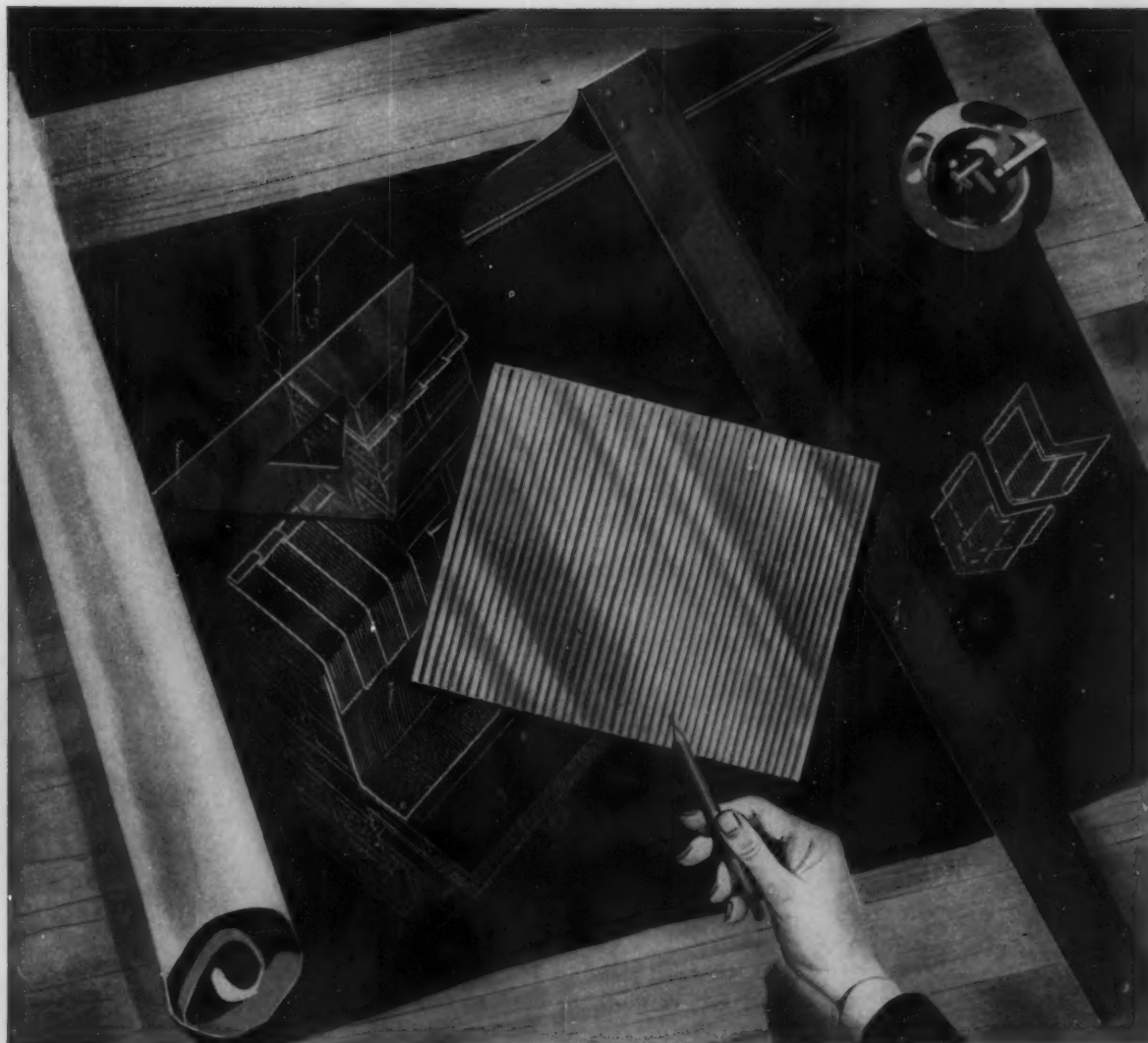
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Crimped Monel* roofing sheet cuts costs on expansion joints. How?

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Crimped Monel roofing virtually eliminates seam failure. Its strength and ductility permit the use of sheeting lighter than other conventional roofing materials. It is easy to fabricate; easy to install... especially suited for copings, gutters, fascia, and flashings.

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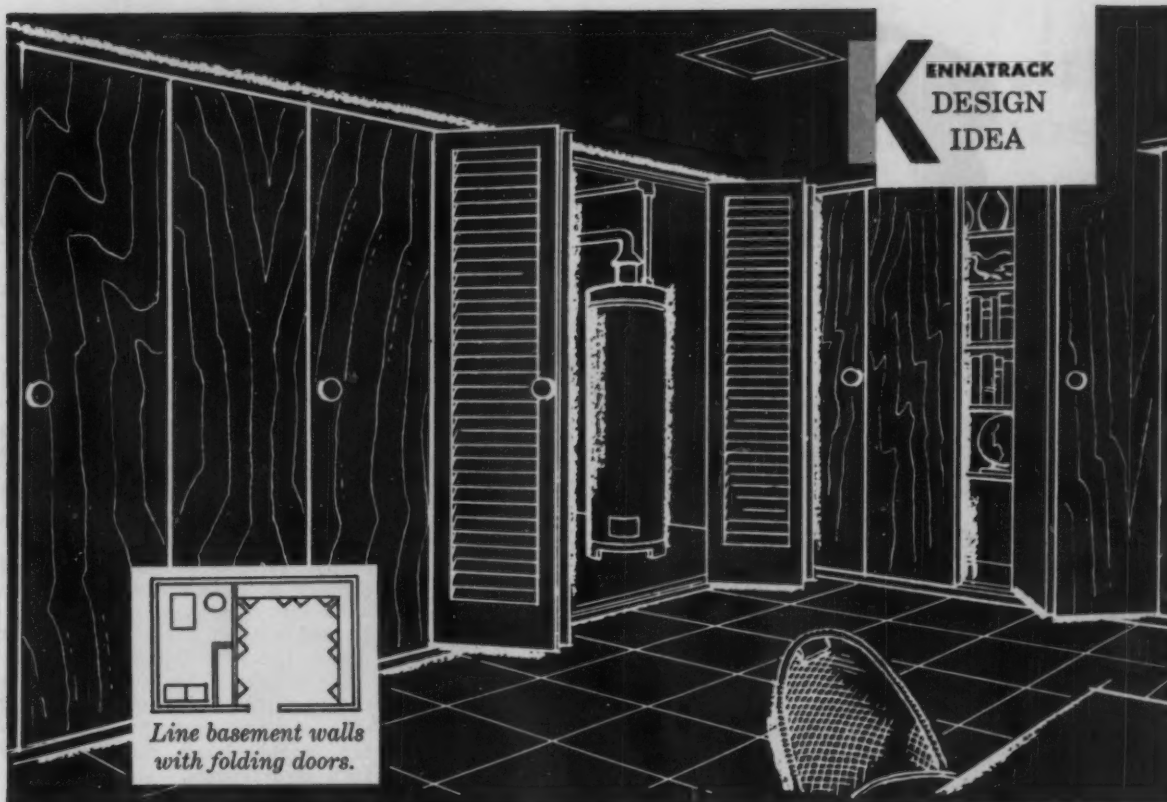
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*Line basement walls
with folding doors.*

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with folding door hardware by Kennatrack

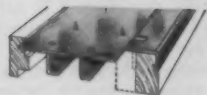
*Folding doors do triple duty:
provide smart new look, storage
area, finish at cost of paneling*

Sound-conditioned Kennatrack hardware for folding doors provides an economical way to divide a room with a smart new look and add extra storage space.

Look how effectively folding doors may be used to bring a new look to a basement. In fact, any room—bedroom, porch, family room—gains

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This is only one of the many new ideas being developed by a full-time staff of designers and engineers at Kennatrack, world's largest *exclusive* manufacturer of hardware for gliding and folding doors. Write us today for full information about this idea. We'll be pleased to help you; we'll also be glad to send you our *free* catalog so you can see for yourself why more architects specify Kennatrack *Gliding Door Hardware* than any other line.



KENNA-PAK. One-piece header assembly (with track installed) for quick and easy installations of by-passing doors.



KENNAFRAME. Original, patented all-steel frame (with aluminum track) for pocket doors. Goes up in minutes.

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SOUND-CONDITIONED GLIDING DOOR HARDWARE

Kennatrack Corporation, Elkhart, Indiana
A subsidiary of Ekco Products Company

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Alberene Stone adds "Dark Accent" Beauty That Requires no Maintenance

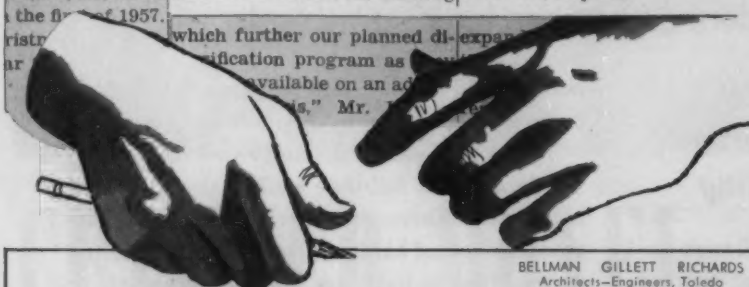
The Toledo Trust Company's Branch Bank exemplifies the beauty and utility of Alberene Black Serpentine Stone—a natural silicate stone that is weatherproof. Its low absorbency rate, fine grain and absence of stratification prevent spalling and splitting in freezing temperatures. Its all-silicate mineral components resist chemical attack, staining

and loss of surface polish. It requires no maintenance.

Architects are also offered a color range of silvery gray to dark gray; green to black; and jet black. Also economical slab thicknesses of $\frac{3}{8}$ " to $1\frac{1}{4}$ ".

For full information and technical assistance address: Alberene Stone Corporation, 388 Fourth Avenue, New York 16, N. Y., Dept. R.

which further our planned development program as available on an application," Mr. Luke said.



BELLMAN GILLETT RICHARDS
Architects—Engineers, Toledo



ALBERENE STONE

provides LOW ABSORBENCY protection

News from Canada

continued from page 52

where old people like to spend their time. In appearance, it should be friendly—a terrace of row houses, perhaps, or a group of small bungalows—so that it does not bear the stigma of an institution. The old people should have a small garden or balcony where they can sit and watch the activities of those around them. Some authorities believe that housing for the elderly should be intermingled or at any rate be placed close to other types of housing, so that old people may be brought in contact with the young, to the advantage of both.

An essential condition of housing for the aged is that it should give the people living in it a sense of security. Tenants in limited-dividend projects have financial security. They know that their rents will not be increased beyond their means; that they will not be evicted.

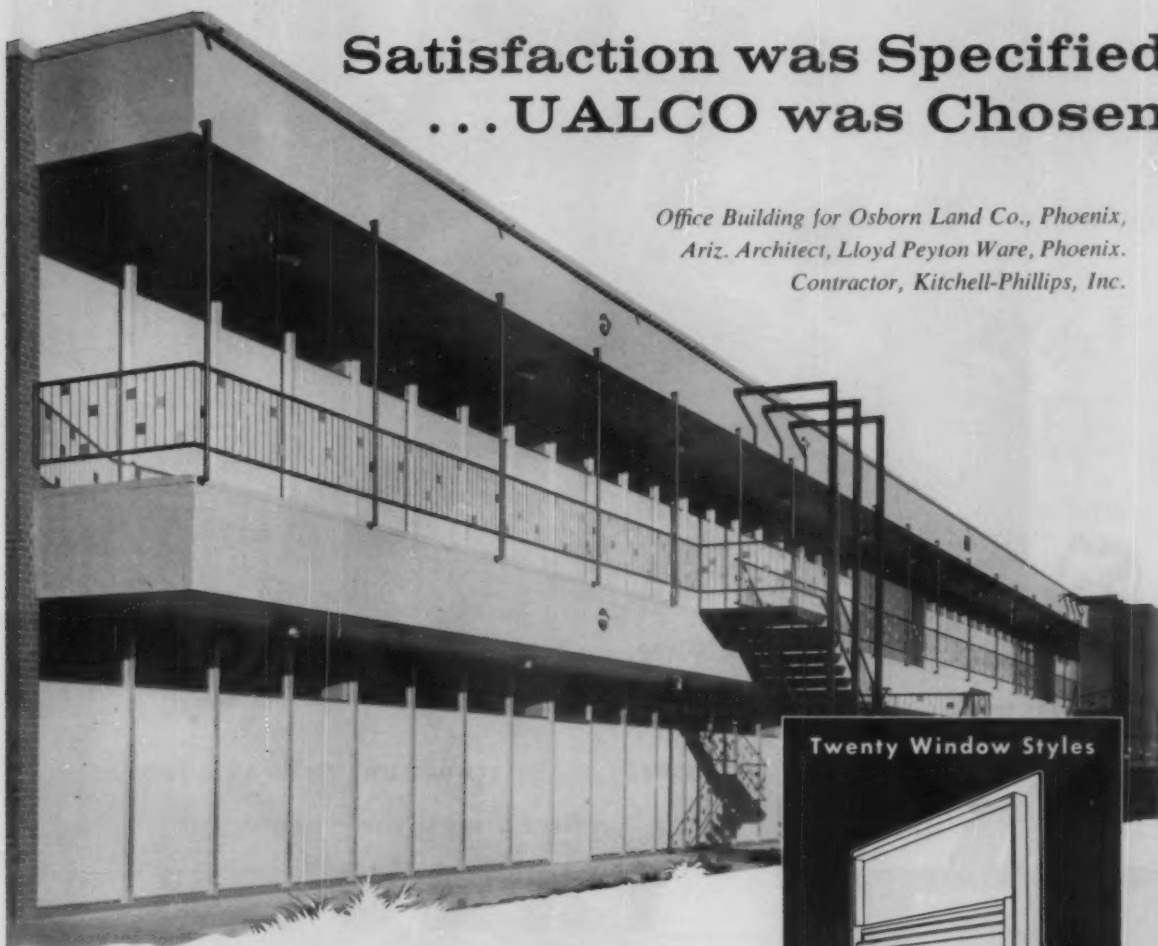
Less tangible but equally real is the sense of living at home. For many old people this means living in familiar neighborhoods surrounded by their own friends.



"Greenacres" Home for the Aged, Newmarket, Ont.; Howard D. Chapman, Architect. Operated by the Municipality of Metropolitan Toronto in conjunction with the Province of Ontario, this project is unique in that all those admitted to residences require special care due to some degree of mental senility. Accommodation provides for nearly 600 beds, of which 529 are for residents, 14 for infirmary and 55 for staff. Construction is steel frame with brick and block walls and double-hung aluminum windows. Extensive gardens for ambulatory patients are provided for men and women patients. Cost, for 500 beds, was about \$6000 per resident

Satisfaction was Specified ... UALCO was Chosen

*Office Building for Osborn Land Co., Phoenix,
Ariz. Architect, Lloyd Peyton Ware, Phoenix.
Contractor, Kitchell-Phillips, Inc.*



From Floor Slab to Ceiling, These Beautiful Walls Are All Ualco Curtain Wall Products

This provocative design is a perfect example of what an architect and Southern Sash engineers can achieve, working together. Ideally balancing utility and beauty, it combines brick, concrete, and Ualco Curtain Wall with impeccable integrity. Mr. Ware consulted the Engineering Department from early pre-planning stages.

Everything between the concrete floor slabs and ceilings is "by Ualco" — even to tubular aluminum door frames and aluminum subframing. The curtain wall (Series 1000) includes Ualco Intermediate

Projected Windows. Ualco Curtain Wall is fabricated complete at the factory in sections up to 22' high, ready for installation. For fine buildings, specify Ualco.

Twenty Window Styles



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Radiant Hot Water Heat!

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*See our catalog in Sweet's or write
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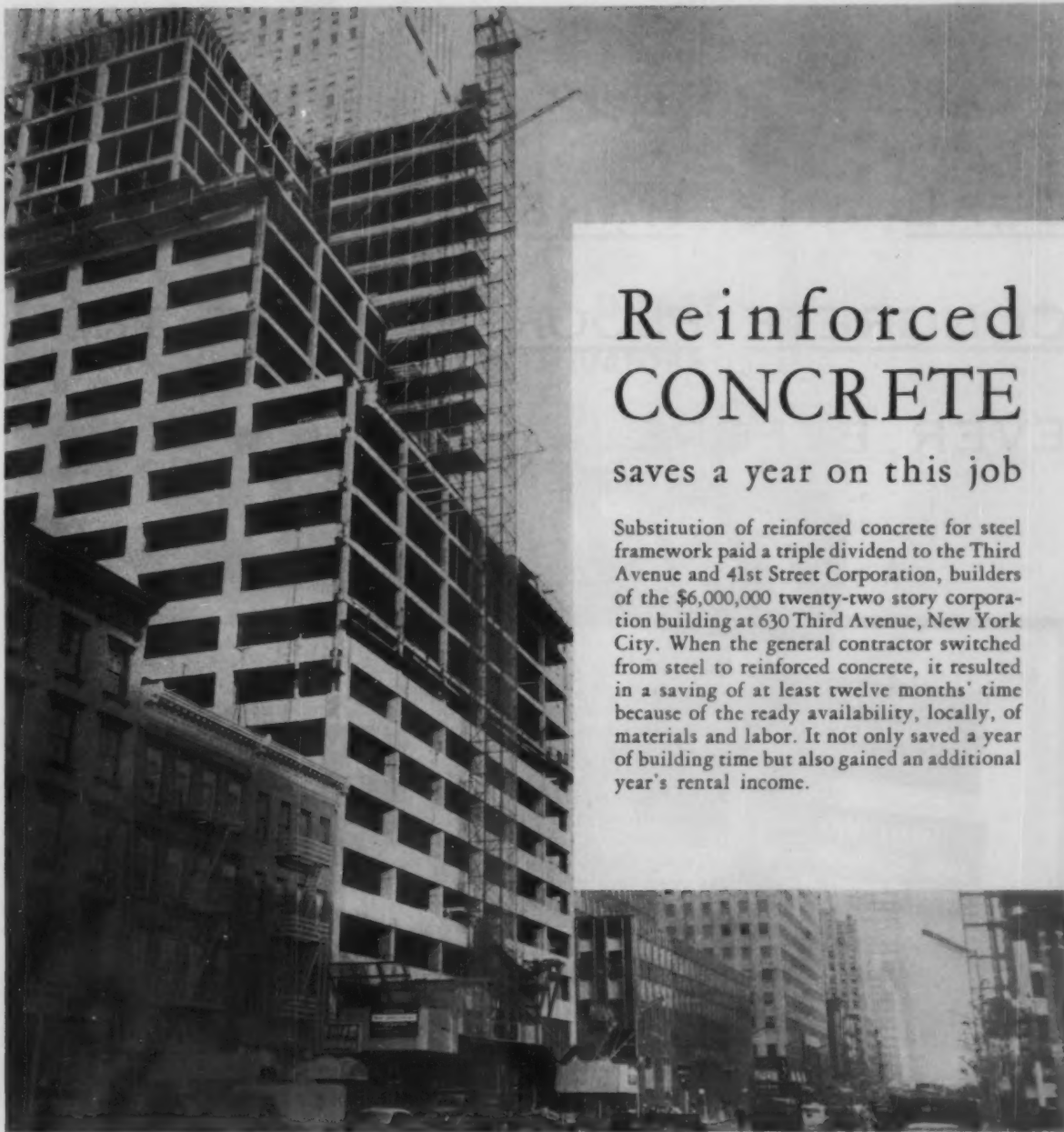


Radiant baseboards keep heating units out of the way, hardly visible. More flexibility in furniture arrangement is possible.



Thrush Water Circulator

H. A. THRUSH & COMPANY
PERU, INDIANA



Reinforced CONCRETE

saves a year on this job

Substitution of reinforced concrete for steel framework paid a triple dividend to the Third Avenue and 41st Street Corporation, builders of the \$6,000,000 twenty-two story corporation building at 630 Third Avenue, New York City. When the general contractor switched from steel to reinforced concrete, it resulted in a saving of at least twelve months' time because of the ready availability, locally, of materials and labor. It not only saved a year of building time but also gained an additional year's rental income.

Owners: Atlas Terminals, Inc., Arthur B. Belfer, and Belco Petroleum, Inc.—Renting and Managing Agents: Collins Tuttle & Company, Inc., New York City
Architects: Emery Roth & Son, New York City—Structural Engineer: James Ruderman, New York City
General Contractor: Diesel Construction Co., New York City

Reinforced Concrete Framework Speeds Construction

Using a high early strength cement and a precision schedule, the builders erected one floor every four days up to the fourteenth level. From that floor on, where the building narrows, the contractors completed the remaining eight stories at an average of one level every three days.

Pays Dividends in Additional Rentals . . . Moreover, the reinforced concrete 630 Third Avenue building was completed

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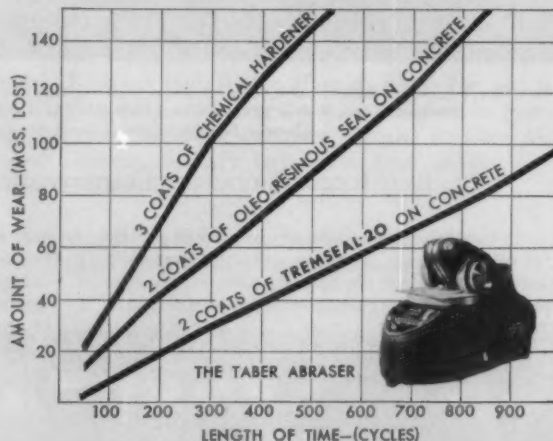
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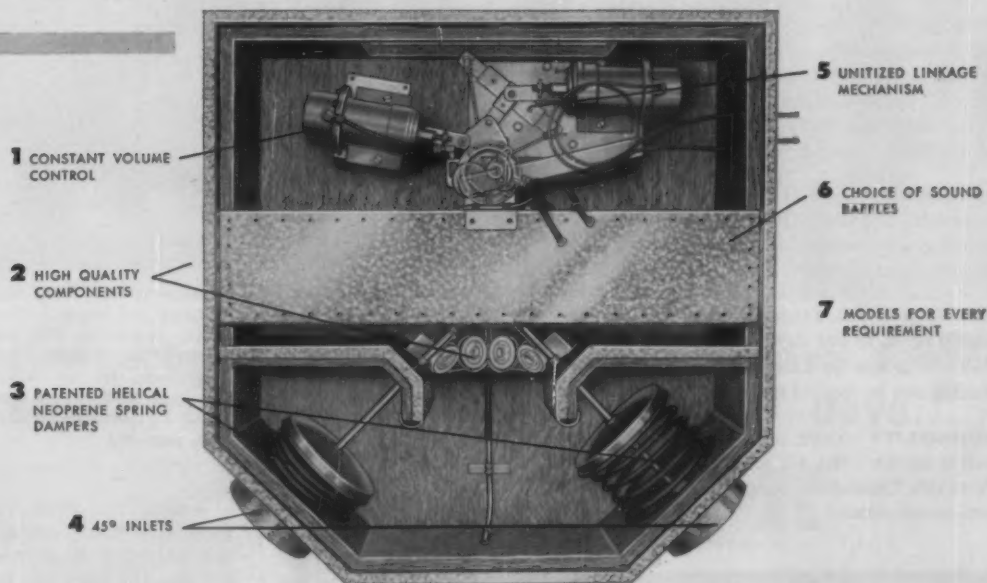
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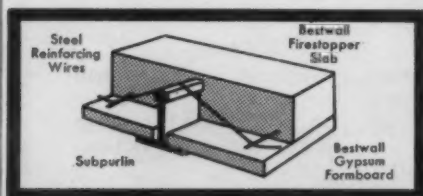
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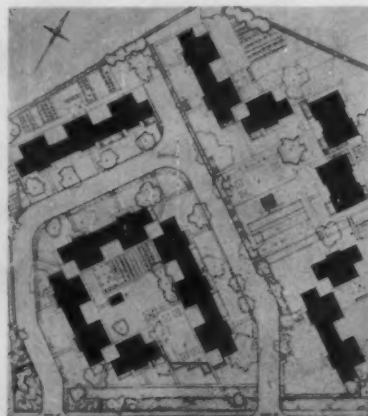
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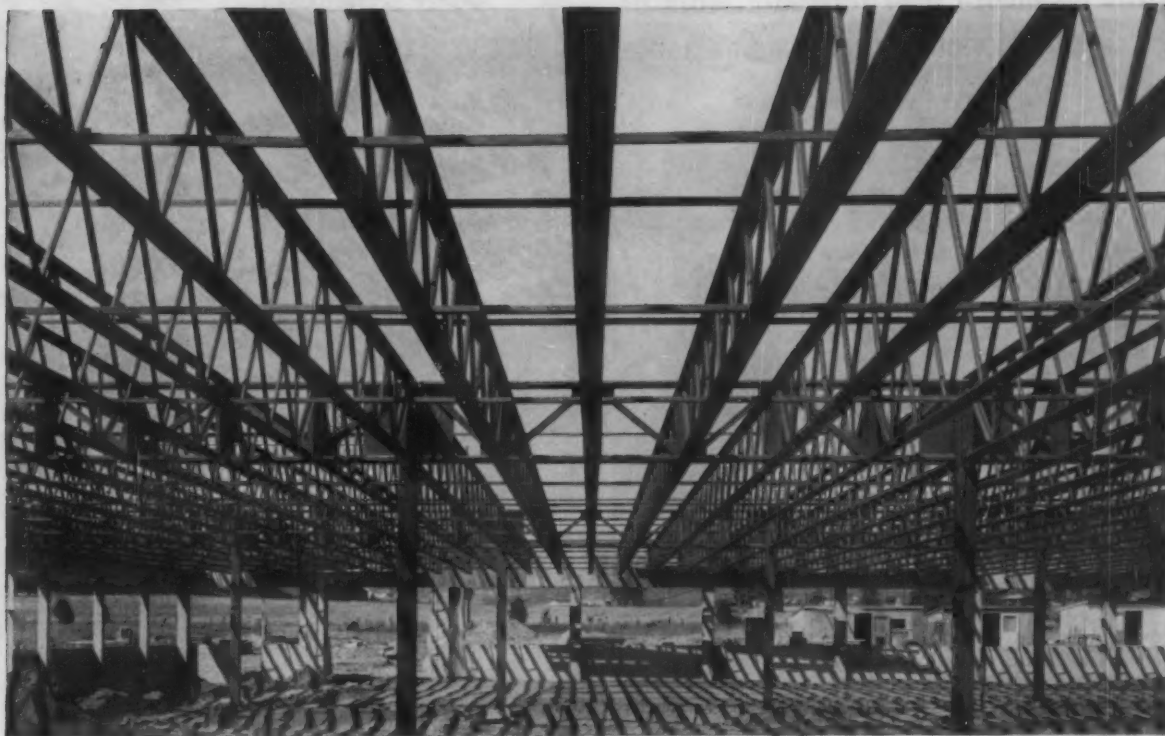
Kiwanis Village, Victoria, B. C.; Charles E. Craig and Sharp & Thompson, Berwick, Pratt, Architects. This project, providing 34 units for couples and eight bachelor apartments, won the 1955 Massey Foundation Gold Medal as an outstanding contribution to Canadian architecture (AR, Jan. 1956, page 30)

Among the limited-dividend projects that have attracted attention, not only for their social amenities but for the high quality of their design, is Kiwanis Village at Victoria, B. C. In 1955 it won for its architect, Charles E. Craig, the Massey Foundation gold medal as an outstanding contribution to Canadian architecture.

Kiwanis Village has 34 units for couples renting at \$23 a month and eight bachelor apartments renting at \$16. An additional charge of \$14 a month is made for services—hot water, heating, stove and refrigerator—but adjustments are made at the end of the year if this is more money than necessary to pay the bills.

Total cost of the Village was \$290,000, to which the British Columbia government contributed \$95,000; the City of Victoria, \$5000; public donations—through the Kiwanis Club of Victoria—amounted to \$120,000; and the remaining \$70,000 was borrowed through CMHC.

The assistance of Central Mortgage and Housing Corporation in the preparation of this feature is gratefully acknowledged.



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instrumentation, functions of instruments, dial gauges, use of isotopes and x-rays for quality control.

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Meetings and Miscellany

continued from page 28

use and occupancy of elderly persons. For projects approved prior to construction, 40 per cent of the units would have to be designed for elderly persons' occupancy. (In all these considerations an elderly person is defined as any married or single person 60 years old or older.)

On the loan-to-value ratio, FHA could approve 100 per cent of replacement cost where non-profit organizations were involved, 95 per cent for profit groups, with the Commissioner given authority to regulate or restrict the mortgagor as to

rents or sales, charges, capital structure, etc. He also could prescribe procedures to insure that elderly persons are given authority and preference in renting units. A 4.5 per cent interest rate and prevailing wage provisions of the Davis-Bacon Act would apply.

The present government programs were described by Mrs. Cleverly and J. Stanley Baughman, president, Federal National Mortgage Association. The program in New York State, a leader in the nation's effort to provide this kind of shelter, was

described by Joseph P. McMurray, Commissioner, New York State Division of Housing.

The market potential as seen by the Federal government was outlined by M. Carter McFarland, assistant administrator, Housing and Home Finance Agency. The elderly are a large and growing part of the total market with one out of 10 of the total population expected to be in the 60 or over category by 1978. This would mean a total of some 22 million persons classed as elderly. While the median income of these people is relatively low (in 1955 it was \$2800, a fair number of the elderly have a quite substantial income, he pointed out. Furthermore, the median income is expected to increase and this spokesman predicted that in the future nearly everyone can retire on a fixed income.

The average net worth of the elderly was said to be \$4800. And 68 per cent of the elderly own their own homes, according to the latest figures available, but Federal officials believe this may be 70 per cent today. The volume of these home owners presently in the market is felt to be large, however, because their accommodations are too large for them. Many of the older people in colder climates want eventually to seek warmer locations, Mr. McFarland said, but the great bulk of them will stay in their own communities, establishing a sure market in every city, town and hamlet of the country.

The elderly want to be mixed in with other age groups to some extent but wish for a measure of privacy also.

"Most of the elderly want to buy a moderately-priced, small, one-floor, accident-proof, but not overdesigned home," Mr. McFarland asserted. "It is a mistake to make your housing for the elderly look too much like housing for oldsters." He made the point that in sales housing the type of units suitable for occupancy by elderly persons is equally suitable for families with one or two children; and so designed, they offer a firmer basis for risk by the builder and the government.

He urged builders not to overlook the semi-institutional needs that FHA is trying so hard to do something about just now. He reminded them that there is a great significant social need that sales and normal institutional housing will not meet.

Carl T. Mitnick, New Jersey builder who co-chaired the meeting with Stanley Waranch, Norfolk, Va., said a market for 150,000 privately-built rental housing units a year for elderly persons is possible and practical.

—Ernest Mickel

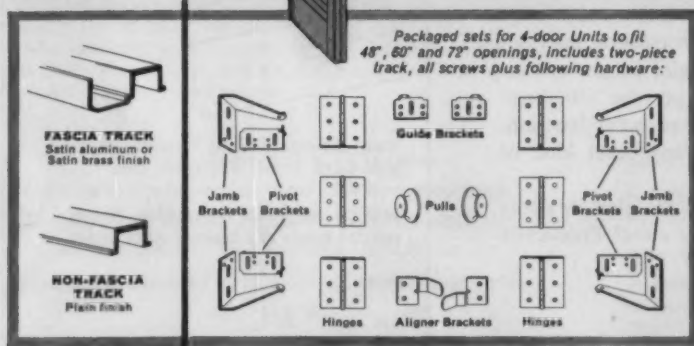
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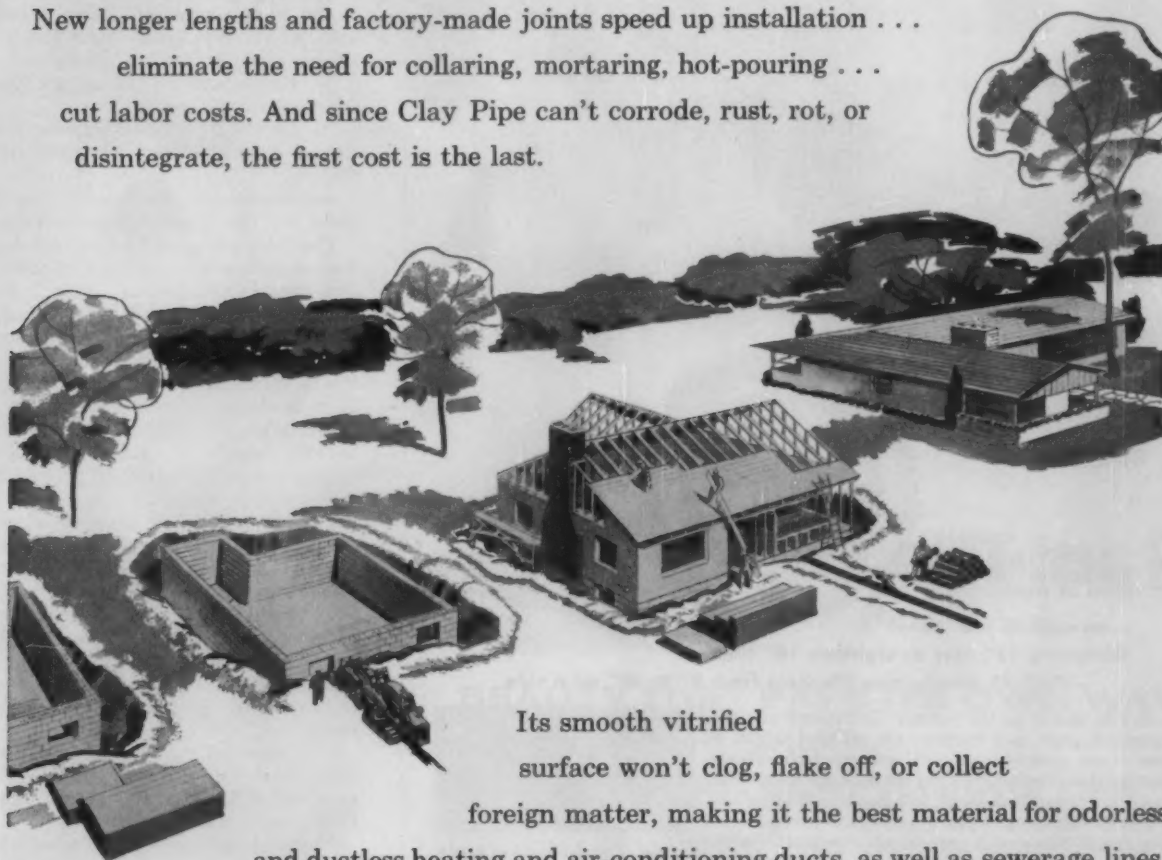
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Meetings and Miscellany

continued from page 34

encing a metropolitan area population explosion which creates new and unprecedented problems, physical and social.

He stressed a need not only for physical planning to meet the requirements of the metropolitan population explosion, but of social planning as well, "of rational decision-making and programs in respect of the human, as well as the physical, frictions of metropolitan growth and development."

One highlight of the Washington meeting was a report by Robert C.

Weinberg to the panel on urban design carrying the recommendations of a joint committee on design control of the New York area chapters of the American Institute of Planners and the American Institute of Architects. A committee of five planners, five architects and a lawyer worked more than four years on the problem of esthetic regulations as they affect the appearance of communities. It concluded readily that a new planning approach is needed.

The committee summarized the principles guiding its recommenda-

tions with the statement that public action toward improving the appearance of communities should:

"1. Emphasize a positive search for beauty rather than negative prohibitions.

"2. Carefully observe the distinctions between legislative and administrative actions as well as between matters for lay or expert judgment respectively.

"3. Aim at liberating the creative wellsprings of the ultimate designers.

"4. Work through a community wide design plan as an integral part of the master plan, providing neighborhood esthetic frameworks for the design of individual structures.

"5. Encompass all the things seen from the public ways.

"6. Derive its application from the special characteristics of particular places."

Approximately 1500 were registered for the Washington meetings.

The "slave market," a featured session at each annual conference where jobs open in the field are offered and applicants interviewed, was a lively meeting here with some 500 persons circulating through the room. There was a mimeographed listing of 131 open positions giving qualifications and salaries. In addition, a number of bulletin boards around the Statler-Hilton hotel carried other notices of job openings and jobs sought.

Paul E. Middleton, director of the planning and engineering branch of the Urban Renewal Administration (Housing and Home Finance Agency), Washington, D. C., was elected president of the A.S.P.O. He was vice president of the Society last year, and succeeded Henry J. Sullivan of Detroit as the new organization president.

Named as vice president for 1958-1959 was Harold S. Shefelman, member of the Seattle, Wash., City Planning Commission.

Three directors were elected for three-year terms: Arthur J. Baum, chairman of the Los Angeles County Regional Planning Commission; T. P. Kennedy, Jr., Nashville, chairman of the Davidson County Planning Commission; and Francis S. McMichael, chairman of the Mount Lebanon, Pa., Planning Board and president of the Pennsylvania State Planning Association.

George F. Emery, Fort Lauderdale, Fla., planning consultant, was elected to a two-year term to fill Mr. Shefelman's unexpired term as director.

The 1959 National Planning Conference will be held in Minneapolis, it was decided, with the 1960 meeting in Miami Beach.—Ernest Mickel.

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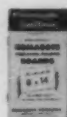
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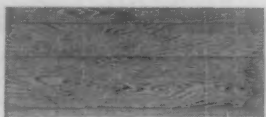
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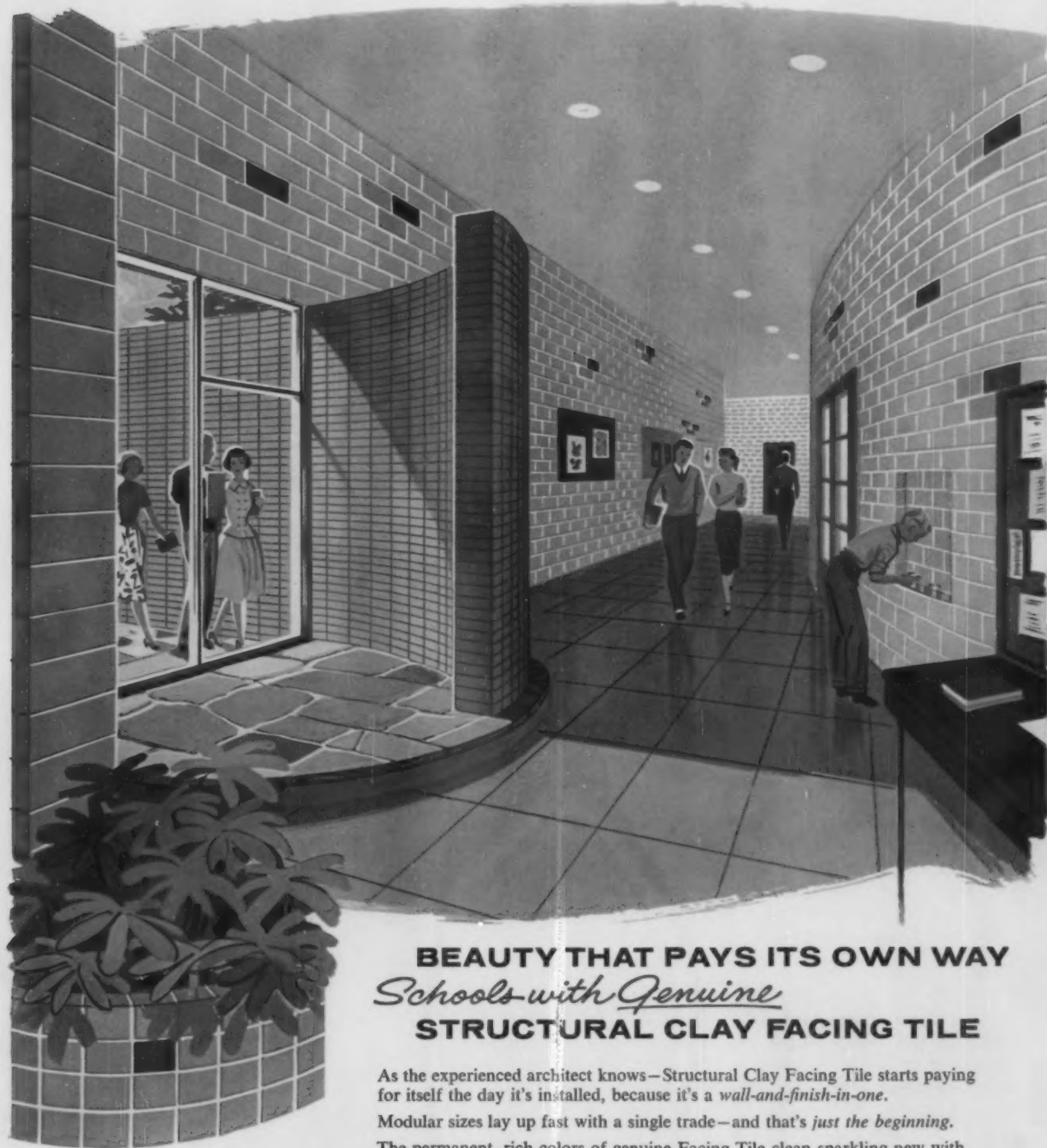
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It was stressed that there would be no massive Federally-financed shelter construction program.

The new emphasis on fall-out pro-

tection does not mean that FCDA intends to abandon its work on blast and fire shelter design. On this point, however, the recent agency announcement said:

"With reference to blast shelters there are still difficult questions having to do with the amount of time that would be available to enter the shelters, the uncertainty of missile accuracy and the effectiveness of our active defense. There is no assurance that even the deepest shelter would give protection to a sufficient number of people to justify the cost. In

addition, there may not be sufficient warning time in view of the development of missile capabilities to permit the effective use of blast shelters."

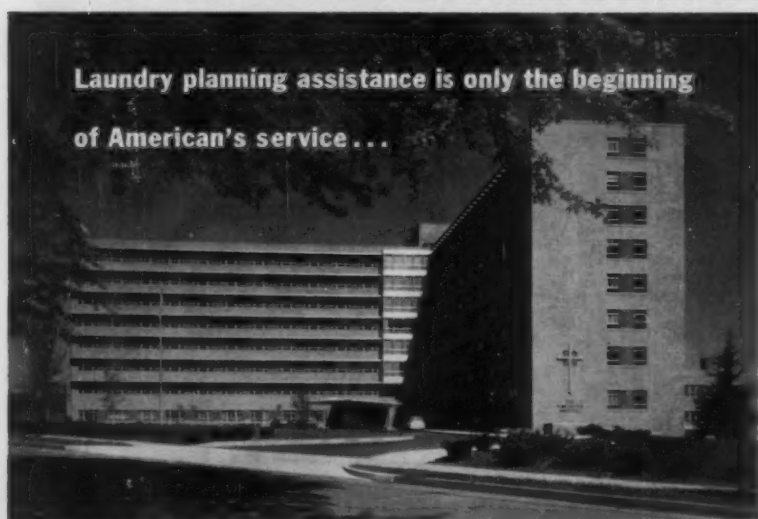
FCDA is thinking more and more in terms of the "improvised" shelter—the type that can be easily and quickly provided with a minimum of structural change. For example, it pointed out that a single basement room in a post office could be made windowless, provided with a protective door and with certainty that the floor or floors above it meet the criteria for fall-out protection, the only remaining problem would be ventilation, a simple one solved with a conventional air filter.

The agency tends to minimize construction problems in the provision of large shelter areas. It feels that underground parking areas with three ft of earth material on top and adequate filtered air can furnish a nice solution to the radiation problem. The access question is not as serious for fall-out protection alone as it would be for safety from fire and blast. Two hours would likely be the lapsed time from bomb detonation to serious fall-out exposure whereas 15 minutes might be the length of time allowed for reaching shelter against fire ball effects.

But another problem crops up in the design of shelters for fall-out. That is in required periods of occupancy. Personnel in a saturated area must be prepared to remain in the protective areas for as much as two weeks, assuming natural decontamination. This is because the decay rate amounts to a decrease of one-tenth for every seven-fold increase in time. All of which presents greater challenge to the designer of multiple-occupancy structures.

The big job is to get over to the people the danger of fall-out so they will realize the need for shelter, said one FCDA official. It is a reasonable assumption, he added, that in any pattern bombing more than twice as many would die from fall-out as from blast and fire.

The magnitude of this problem is explained to some extent in government deductions from the Operation Alert conducted in May. This assumed 282 strikes with total yield of 642.32 megatons. Analysis indicated, FCDA said, that as of D plus two days, two million sq mi, or 67 per cent of the country, would have been affected by fall-out measuring 1/10/r per hr, not a fatal dosage. But an estimated 210,000 sq mi in this hypothetical test showed an extremely hazardous fall-out content exceeding 10/r per hr.



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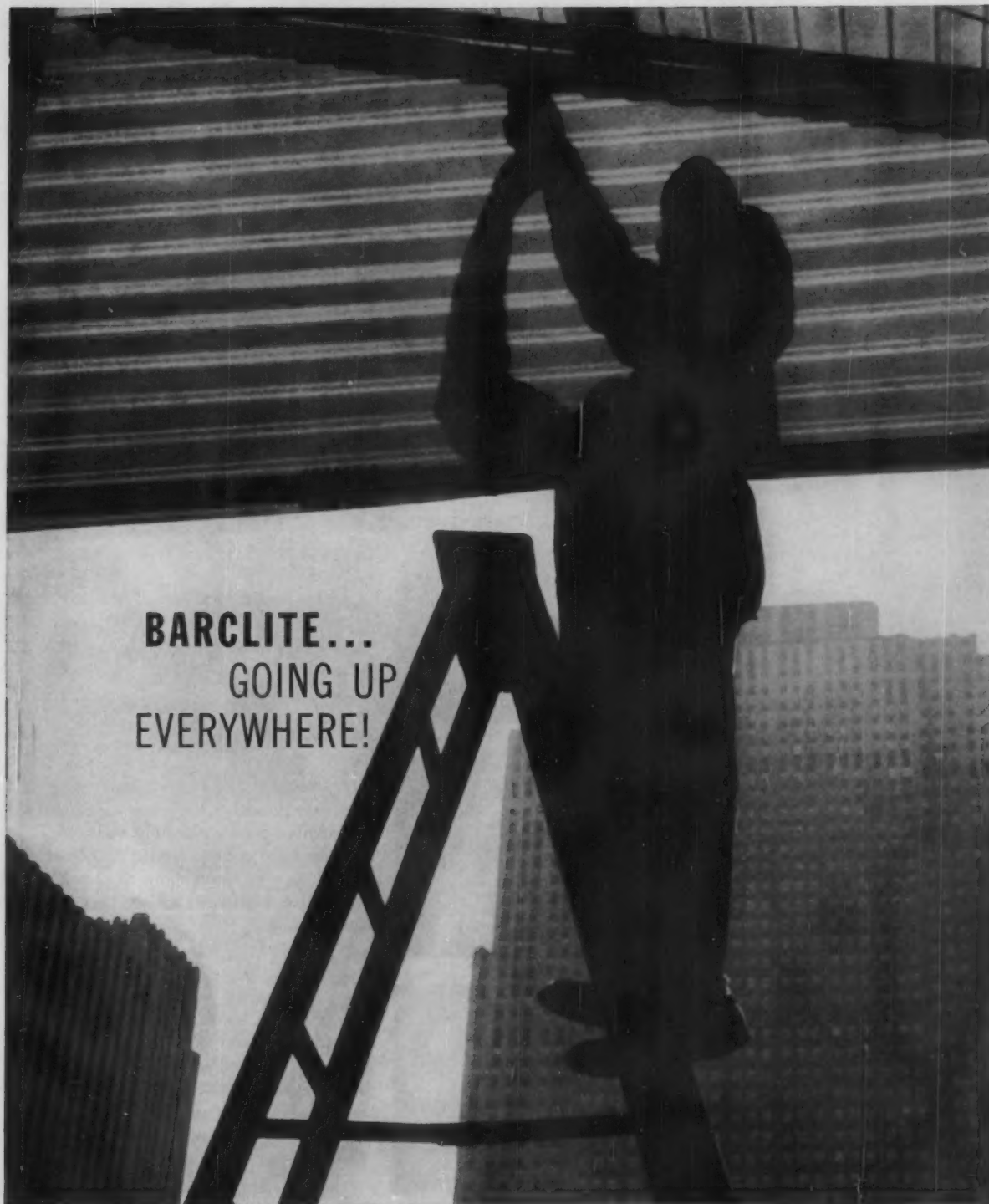
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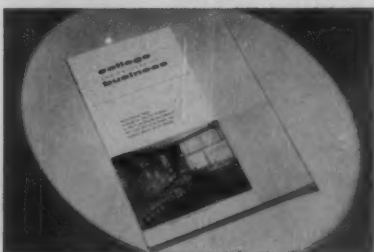
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A Washington Report

As part of its new approach to shelter problems, FCDA intends to survey existing structures on a sampling basis. This is expected to provide definite information on the capabilities of these structures to provide fall-out shelter, particularly in large cities. It points out that some facilities—buildings, mines, subways, tunnels, cyclone cellars, etc.—already afford some protection. The agency will be seeking information to more accurately determine the degree of safety that can be provided

by these facilities to make maximum use of them.

The program of research will be accelerated to show how such protection can be incorporated in existing and new buildings of all types. It was assured that designs of shelters will be perfected to assure the most economic and effective types.

FCDA said the Administration would provide leadership and example by incorporating fall-out shelters in appropriate new Federal buildings hereafter designed for civilian use.

"Common prudence requires," said the agency, "that the Federal government take steps to assist each American to prepare himself—as he would through insurance—against any disaster to meet a possible—although unwanted—eventuality. The national shelter policy is founded upon this principle."

Information for architects is available through technical reports issued by the administration. These are readily available at FCDA offices in Battle Creek, Mich., or Washington.

Washington Topics

continued from page 56

He testified: "I urge that this committee act to strike away the complacency that hangs like a dead hand on so many of our colleagues and the Administration, and report favorably on a bill for Federal assistance for school construction. This is the very least we can do."

Meanwhile, Senator Yarborough (D-Tex.), introduced new legislation which would authorize an annual grant of \$200 million for five years to assist the states in construction of new community junior colleges and the expansion of existing schools of that type. The development of state and local junior colleges—with special priority for those areas where the need is judged to be most acute—would be encouraged. The bill called for flat Federal grants to states whose plans were approved, the money going out on a matching basis.

Testimony before Congress indicates that the number of potential college students in the country will double by 1970, Senator Yarborough said. He feels that unless immediate steps are taken to construct buildings to accommodate them, the children of World War II and Korea veterans will not have the opportunity to attend college because of the lack of facilities.

FHA Authorizes Research for Projected Homes Survey

The FHA's architectural standards division has launched the investigation phase of its comprehensive plan to survey the faults and failures of FHA-insured homes.

A contract with W. R. Simmons & Associates Research, Inc., New York, calls for that organization to design a survey questionnaire, pretest it, and submit a report to the government agency on the feasibility of the program.

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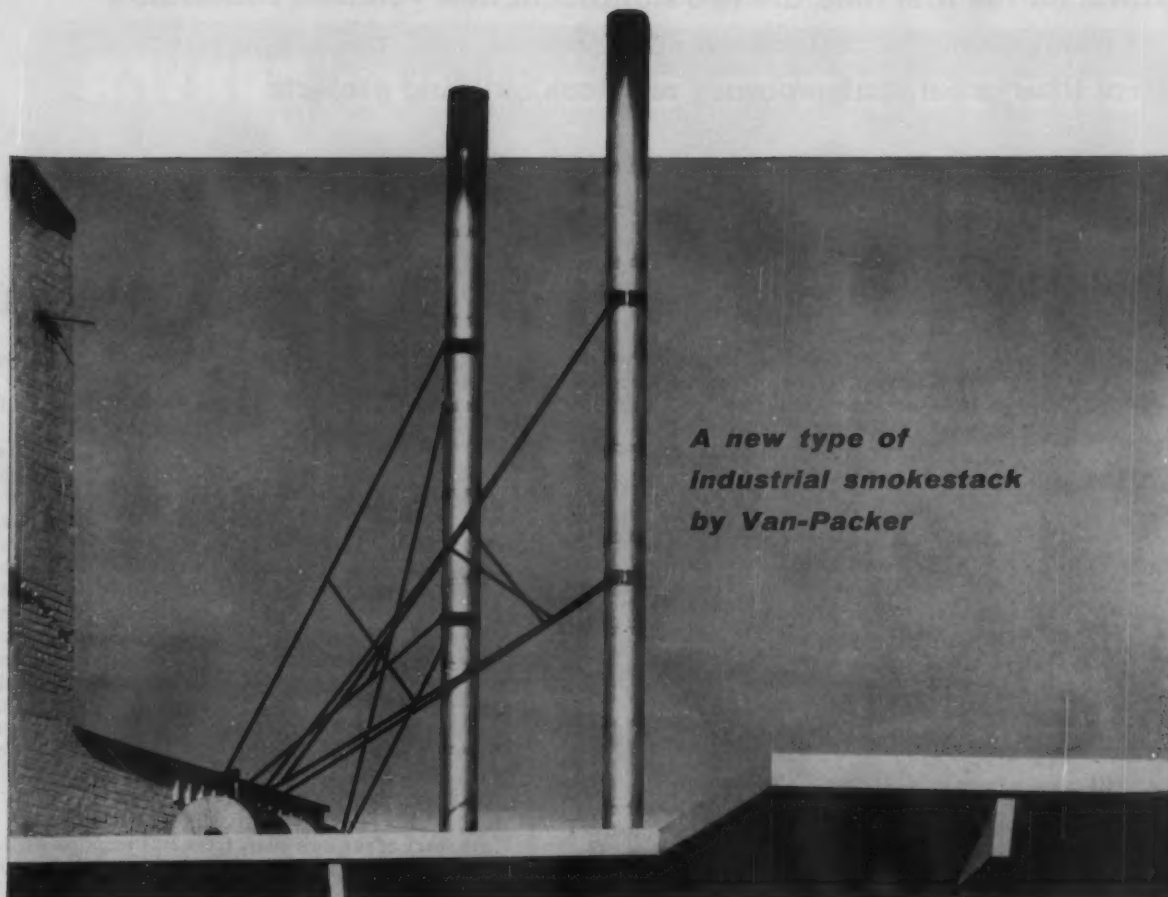
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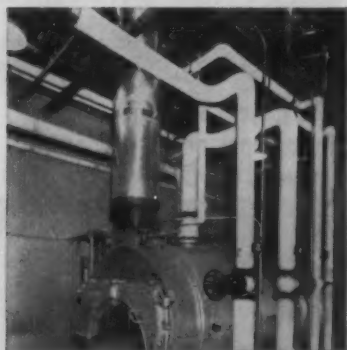
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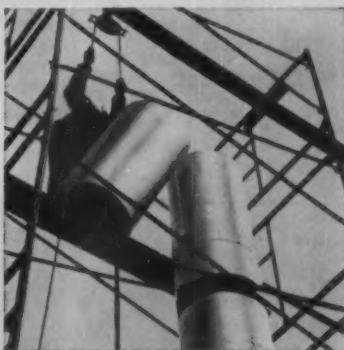
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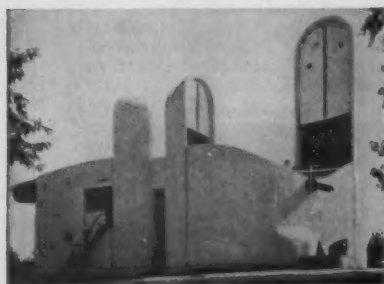
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Whitney S. Stoddard, Professor of the History of Art at Williams College, received his Ph.D. from Harvard in 1941. He has held a Carnegie grant, the Harvard-Sachs fellowship, and an advanced research Fulbright.

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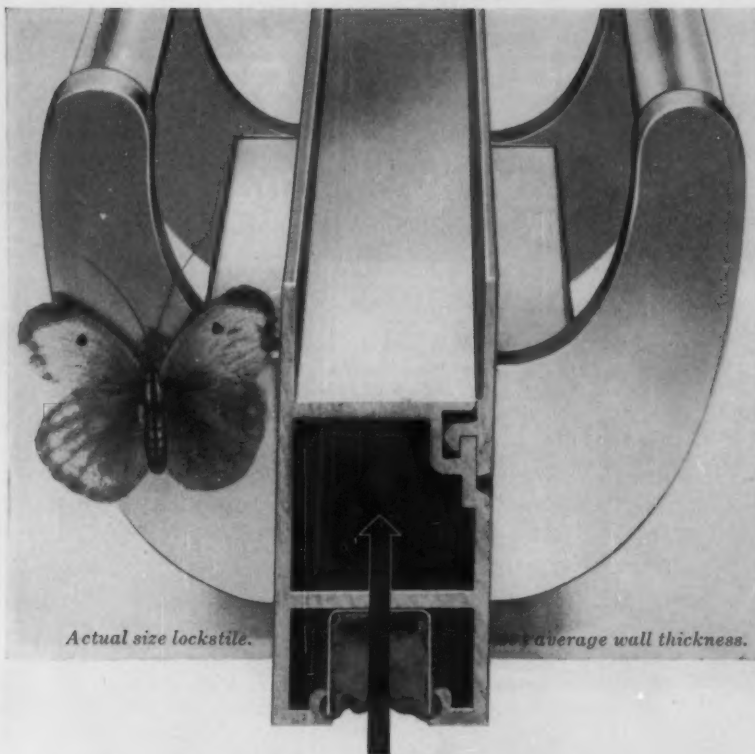
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Washington Topics

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There was hope the Simmons report could be in FHA's hands by mid-year, but it had until August under terms of the agreement.

FHA reached its 24th birthday on June 27 and posted a cumulative volume of business amounting to nearly \$50 billion. An announcement from the agency said: "The soundness of FHA operations has been proved over the years. FHA stands forth as a self-supporting government agency. Its loss ratio is very low, and its reserves built up from income and investments total over \$600 million."

FHA Gets \$4 Billion Authorization After Funds Run Out

The Federal Housing Administration faced another of its periodic crises late in May when it ran out of loan insurance authority. A hurried call to Congress brought a quickly enacted joint resolution providing an additional \$4 billion which was expected to carry the agency through most of its loan insurance activities for another year.

Housing subcommittees in both House and Senate took another look at the repeated development of this emergency situation and were expected to write corrective measures into the 1958 omnibus legislation.

Housing and Home Finance Agency itself asked that Congress provide the FHA with \$4 billion in insurance authorization for each of the four fiscal years following fiscal 1959. This, it was felt, would allow the programs to operate without the risk of needless interruption and uncertainty as to availability of authority.

No appropriation of funds is involved in this. What the Congressional action amounts to is the granting of permission for FHA to use its own funds.



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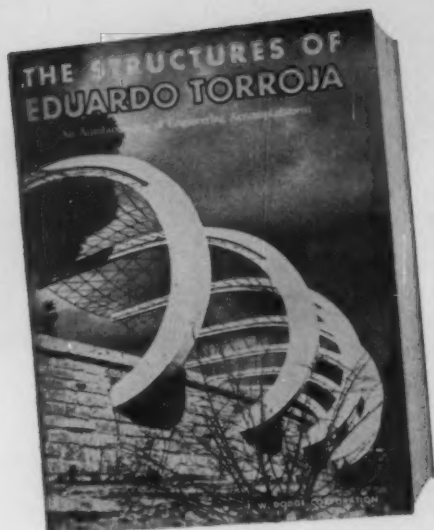
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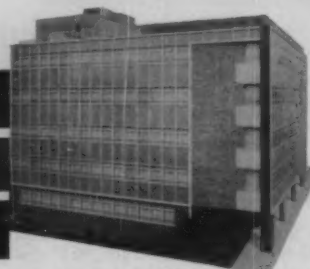
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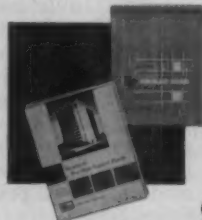
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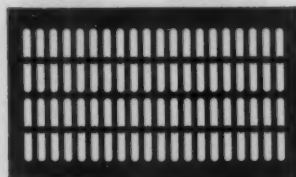
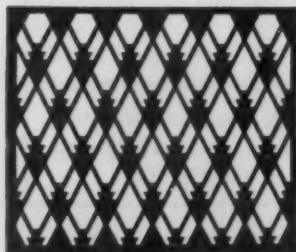
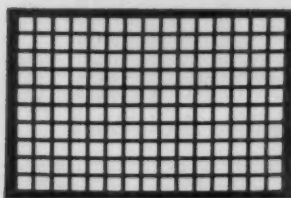
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Washington Topics

The most recent crisis developed when the emergency housing bill (signed April 1) and easier money for housing credit combined to bring in a flood of new applications. (The insurance authority in question covers all FHA programs except the property repair and improvement program under Title I, and the Armed Services rental program under Title VIII.)

The flow of applications into FHA field offices has been increasing markedly this spring. The April volume, for example, was more than double the number of applications in that month a year ago. As a result, FHA's authority dwindled to the point where on May 27 it had to wire field offices to stop insuring loans. Final Congressional approval of the emergency resolution followed on June 2. With White House clearance, FHA was able to resume its normal activity shortly thereafter.

Many observers, having seen the crises develop over the years, were asking when something would be done to prevent them more or less permanently. The last previous increment of authority, \$3 billion, was given the agency July 1, 1956.

New Postal Modernization Fund Falls Short of Hopes

The President's signature on the postal rate and wage bill assured only a part of the huge facilities modernization program hoped for by the Post Office Department.

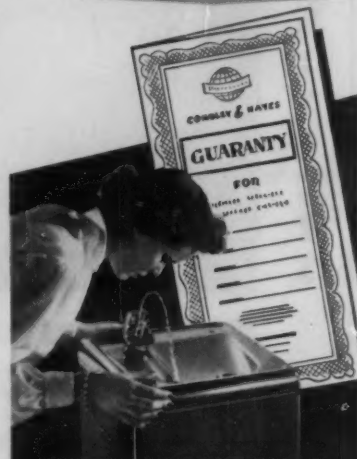
The new law creates a new postal modernization fund. It authorizes appropriations annually by Congress of money to be spent on improving equipment and facilities for the performance of the postal function.

This falls somewhat short, however, of the broader construction program envisioned earlier as the bill was written to provide money from rate increases to assure a substantial construction effort.

Now there is no certainty as to how much money will be appropriated and the current budget for fiscal 1959 provided for no sizeable modernization program. The Post Office Department still would like to see some 12,000 new postal facilities go up during the next three years. It hopes to persuade private capital to finance the quarters under its straight lease method. Appropriated funds would be used for equipping the new buildings.

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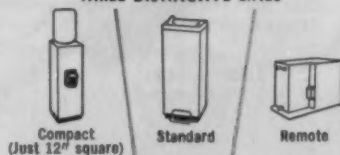
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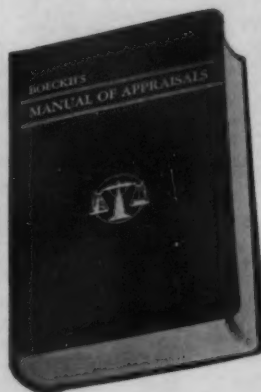
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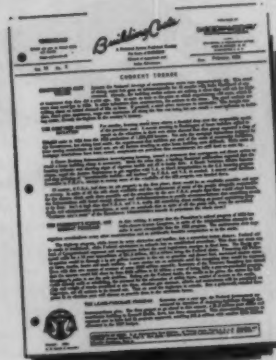


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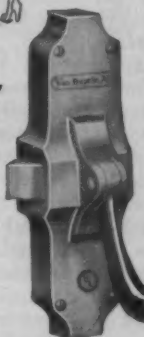


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Washington Topics

Community Facilities Bill Moves In Congress But Faces Veto

The community facilities construction bill, which would enable local communities to borrow Federal funds at low interest rates for building hospitals and all sorts of other public structures, moved on in Congress, getting overwhelming Senate approval and further liberalized by the House Banking Committee. But the measure faced a probable veto at the White House.

As the House group approved the measure, it called for authorization of \$2 billion in Federal loans at an interest rate of 2% per cent; this against the \$1 billion total fund and 3½ per cent the Senate provided.

Administration spokesmen opposed the effort before both Senate and House committees, contending the intended assistance would come too late to be of recession help, and that it would substitute Federal financing for private funds in the construction of non-Federal public works facilities. The U. S. Chamber of Commerce also opposed the measure, while spokesmen for municipalities for the most part favored the proposed aid.

The House committee ruled out use of the loans for school construction but otherwise approved a very broad definition of public works or community facilities. Under the House committee version, communities would have to show they could not get the same financing from private sources at equally favorable interest rates to qualify for the Federal help.

New Effort Begun in Congress on Rivers and Harbors Bill

A new effort was begun in Congress on a measure already vetoed twice in the past two years: the big rivers and harbors and flood control authorization bill.

The President has been objecting to the bills sent him on grounds they contained many projects which had not received sufficient engineering study and others that did not meet the standards for local financial participation.

Committees were at work last month on new compromise measures which many members hoped would overcome the White House objections and secure an authorization law to add more than \$1 billion worth of such civil works construction to the standing approved list of projects.

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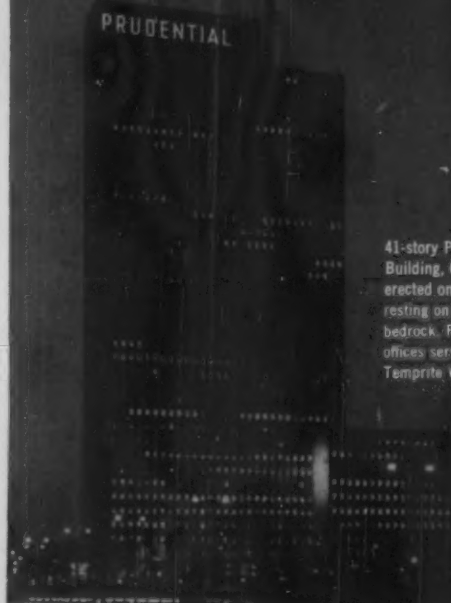
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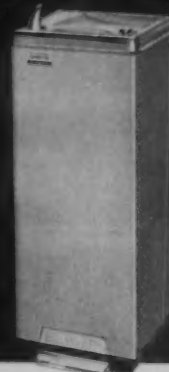


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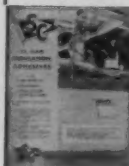
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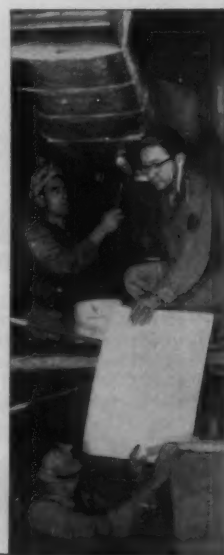
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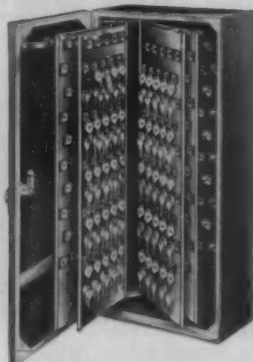
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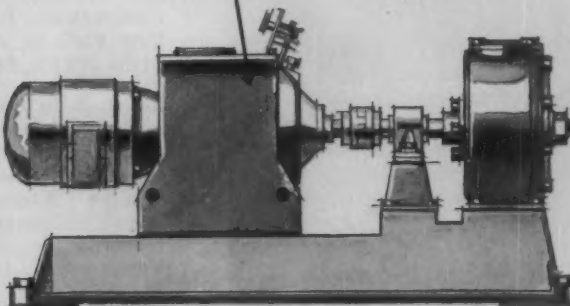
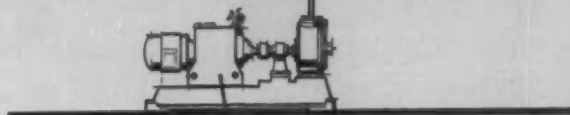
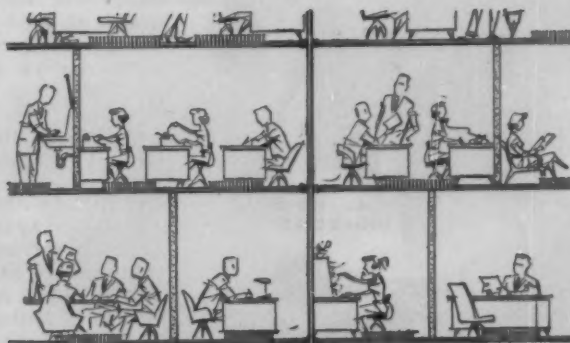


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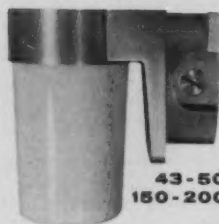
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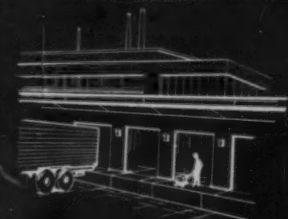
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Required Reading

continued from page 63

Successful Publicity And Public . . . Relations in Real Estate by Jack Stark is, of course, intended specifically for real estate men. Nevertheless, others will find it valuable for its wealth of solid information on the techniques of preparing copy for the press, dealing with photographers, etc. The author is director of public relations for a large developer of land. *Prentice-Hall Inc., Englewood Cliffs, N. J., 1958. 227 pp. \$5.65.*

The History And Technique Of . . . Lettering by Alexander Nesbitt. This is a corrected, inexpensive edition of a book first published in 1950. There are two main divisions: "The History of Letters" and "A Practical Course in Lettering"; the illustrations are numerous and good. *The Book of Signs* by Rudolf Koch. A fascinating collection of signs of all kinds (e.g., the elements, astrology, house marks) is reproduced here as originally cut on wood; this is a new edition of the English translation first published in 1930. Both *Dover Publications, Inc., 920 Broadway, New York 10, N. Y., 1957. Respectively, 300 pp., \$2.00; 104 pp., \$1.00.*

Research In Recreation . . . Completed in 1957. This pamphlet, listing 207 reports on all aspects of recreation, includes a section on "Areas, Facilities, Structures and Equipment." *National Recreation Assn., 8 West 8th St., New York 11, N. Y., 1958. 29 pp. (mimeo.). \$1.00.*

A Report To The New York City . . . Housing Authority: Recommendations on Organization and Management Policies. The searching recommendations listed and discussed in this report deal with some of the most troublesome problems involved in public housing, such as, race relations, problem families, tenant selection. *Citizens' Housing and Planning Council, 20 West 40th St., New York 18, N. Y., 1958. 44 pp. (mimeo.).*

Aluminum In Modern Architecture . . . 1958 edited by John Peter. This is the first annual supplement to Volumes I and II of the same title, published in 1956. It is handsomely put together and illustrated and includes presentations of a number of buildings using aluminum, a description of aluminum anodizing, and a technical discussion of aluminum curtain walls by Paul Weidlinger. *Reynolds Metals Co., Louisville, Ky., 1958. 118 pp., illus.*

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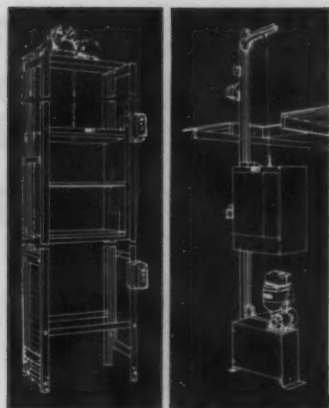
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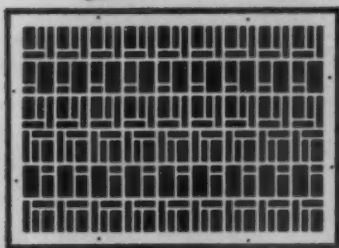
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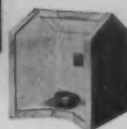
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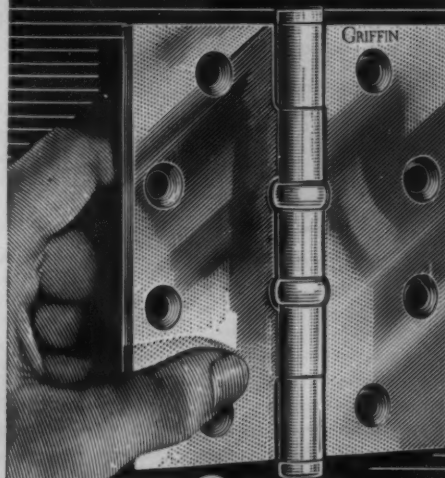
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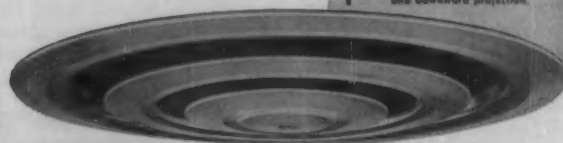
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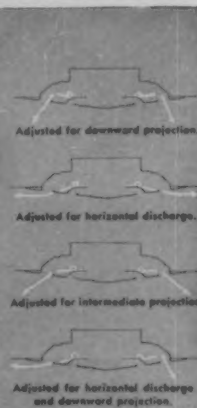
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Current Trends in Construction

As Reflected in Contracts for Future Construction in the U.S. Reported and Tabulated by F. W. Dodge Corporation

SIGNS OF A NEW CLIMB IN CONSTRUCTION ACTIVITY

Monthly Totals Turn Upward: Prospect Is Biggest Market Ever in Spite of Building's "High Level Recession":

An Analysis by George Cline Smith, Dodge Vice President and Economist

One of the few good things about the current recession is that the building business has not been anywhere near as hard hit as many other industries. The relatively light impact of the recession on construction has been good, not only for those of us whose activities are related to building, but for the rest of the economy as well. Construction is by far the nation's largest fabricating industry, and for the third recession in a row, it has served to cushion the downturn in general business activity.

This is not to say that we haven't felt any recession at all—many a builder, many a supplier, many an architect, in fact, will testify that things haven't been rosy. Extremely bad weather in the early part of this year complicated matters by slowing up work already under way and delaying the start of new work. The weather effect, incidentally, shows up very clearly in the employment chart on this page. The figures are adjusted for normal seasonal variations, and the sharp dip this year was mainly the result of abnormally bad winter weather.

But the employment chart shows some other interesting things, as well. One point worth noting is the relative stability of construction employment in all three recessions, including the current one (if the freakish February drop is ignored). Manufacturing employment declined far more severely in each recession.

More important, however, is the growth of the industry in real terms, as measured by employment. During the recession of 1948-49, construction employment averaged less than 2,200,000. In recent months, despite the recession, it has hovered around 2,900,000, nearly a third higher.

This points the way to a surprising fact: despite the recession, the construction industry this year faces the biggest market that has confronted any fabricating industry in the history of the world.

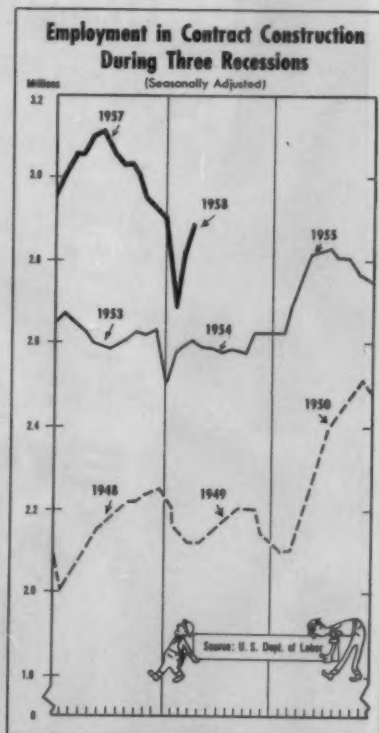
Total new construction this year will be \$48 billion, plus. Of this, about \$18 billion will be for residential buildings, somewhat over \$6 bil-

lion will be for industrial and commercial buildings, \$3.5 billion will be for schools, another \$3 billion or so will go into assorted smaller categories of non-residential buildings. The remainder, more than \$17 billion, will be spent on utilities, military projects, highways and other public works, and farms.

It's true that the total in prospect for this year represents a smaller percentage increase than we have had in a long time. It's also true that inflation is an element in pushing up the dollar figures, and that physical volume probably won't be at a record level in 1958. But this doesn't alter the essential fact that the nation's largest industry will be chalking up its biggest dollar volume in this recession year. How many other industries could say the same?

So much for totals. Which way is the trend going? Since last October, according to our Dodge construction contract figures, the trend had been pretty steadily downward. But April brought a sharp reversal, and contracts rose more than seasonally, reaching a point about four per cent above April 1957. This contrasted with a decline of 11 per cent during the first quarter of 1958.

One swallow doesn't make a summer, and one month doesn't make a trend. But the April contracts have added significance because practically every major construction category showed an increase, indicating a broad, solid base for the upturn. Preliminary data for May support the belief that this trend reversal is real, and that things will be looking up for the rest of this year. Conversations with many architects during the past couple of months reveal a general feeling that work on the boards has been increasing; FHA and VA home mortgage applications are running far ahead of last year; and government anti-recession programs, which rely heavily on construction as their prime mover, are beginning to move. All in all, construction activity seems ready to begin climbing again from its remarkably high-level recession.





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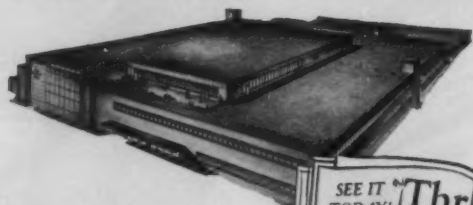
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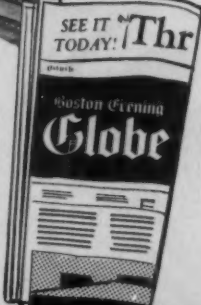
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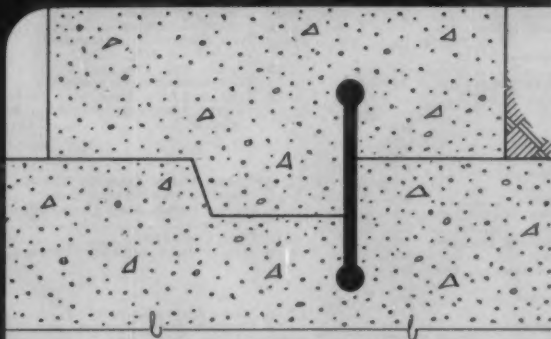
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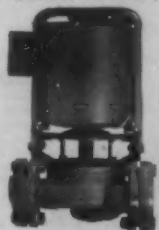
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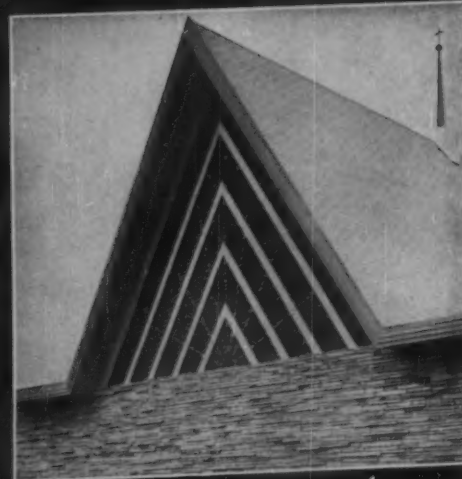
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"For customer appeal...we use Western Pine Region woods"

Boyd T. Prior — Vice President, The Lusk Corporation, Tucson, Arizona

"Our prospective buyers say Western Pine Region woods are easy to maintain, give the home an atmosphere of warmth, and *provide beauty at a reasonable cost.*

"During the past four years, The Lusk Corporation has won four Awards of Merit in Neighborhood Development from the National Association of Home Builders. Wherever Western Pine Region woods have been used, they have caught the attention of discriminating judges."

Give the homes you build the beauty, dignity and customer appeal of Western Pine Region woods. They are milled for exterior as well as interior applications. For more information write to Western Pine Association, Dept. 310-U, Yeon Bldg., Portland 4, Oregon.

FACTS ABOUT WESTERN PINE REGION WOODS

- straight grained
- dimensionally stable
- easily worked
- economical to handle and install
- excellent nail-holding ability
- take paint or stain with ease
- wide range of grades
- ten species



Western Pine Association

member mills manufacture these woods to high standards of seasoning, grading and measurement

Idaho White Pine • Ponderosa Pine • Sugar Pine
White Fir • Incense Cedar • Douglas Fir • Larch
Red Cedar • Lodgepole Pine • Engelmann Spruce

Today's Western Pine Tree Farming Guarantees Lumber Tomorrow

Textolite Ideas



Enclosure built by P. Miller, Coshocton, O., from design by G. Grace, Springfield, Mo.

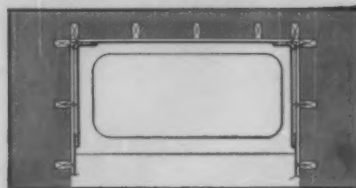
Unique construction slashes cost of colorful General Electric Textolite bath enclosure

New Textolite installation idea comes right out of the kitchen . . . eliminates
special postforming . . . gives custom-built luxury at prefab price

The secret?—one flat sheet and two postformed sections of General Electric Textolite! Readily available in over 70 attractive patterns and colors, these three simple components speed installation, cut material costs—produce a luxurious-looking, watertight enclosure.

What's more, Textolite surfacing is wonderfully practical for the homeowner, too. It resists scuffs, stains, and bathroom steam . . . cleans with a damp cloth . . . stays new-looking for years.

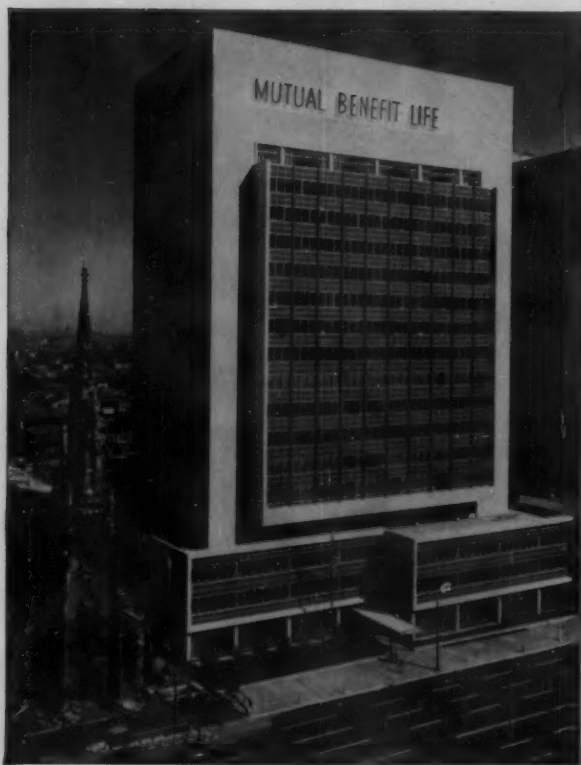
In fact, General Electric's long-lived wall and counter surfacing is ideal wherever beauty *plus* easy maintenance are needed: in schools, hospitals, and stores, as well as homes. See the full line of attractive Textolite patterns in Sweet's Architectural File, Catalog 14a/Ge. If you have any questions on color or material specifications, send them to Laminated Products Dept., Section AR-87, General Electric Company, Coshocton, Ohio. We'll answer them immediately.



Cross-section shows simple construction of enclosure, using two postformed sections and one flat sheet of General Electric Textolite.

Textolite
LAMINATED SURFACING
GENERAL  ELECTRIC

THE VAST MAJORITY OF THE NATION'S FINE BUILDINGS ARE SLOAN EQUIPPED



EGGERS & HIGGINS
architects

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GEORGE A. FULLER COMPANY
general contractor

MANCE ASSOCIATES, INC.
plumbing contractor

NEW YORK PLUMBERS SPECIALTIES CO.
plumbing wholesaler

AMERICAN RADIATOR &
STANDARD SANITARY CORP.
fixture manufacturer

*Award
Winner...*

1957 "Office of the Year"

● MUTUAL BENEFIT LIFE INSURANCE COMPANY's new Home Office in NEWARK, N. J., is the sixth building the company has occupied during its 113 years. Out of its long experience came the controlling decision to combine beauty and dignity with operating efficiency and economy. The exterior of this 20-story, \$12-million structure is of Alabama limestone and blue-green, glare-reducing glass framed in aluminum and stainless steel. The lobby features Pyrenees black and

Vermont white marble accented by vertical lines of stainless steel. All 20 floors are air conditioned. Sounds are deadened by acoustical ceiling tile, and lighting is provided by recessed fluorescent fixtures. To meet changing needs, the steel and glass office partitions are movable. An assembly room accommodating 800 persons and a 500-seat dining room are special features. As are thousands of other fine buildings, this Award Winner is equipped with SLOAN *Flush* VALVES.

SLOAN *Flush* **VALVES**

FAMOUS FOR EFFICIENCY, DURABILITY, ECONOMY

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Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. Architects and Engineers specify, and Wholesalers and Master Plumbers recommend the *Act-O-Matic*—the better shower head for better bathing.

Write for completely descriptive folder

